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The current study examined peer victimization and aggression across elementary school (K, 1st, 2nd, and 5th grades) using Latent Class Growth Analysis (LCGA). Participants were 2624 kindergartners, 1312 of whom contributed longitudinal data. All data were collected via peer nominations. Results indicated four latent classes: Normative (low and declining victimization and aggression); Moderate (elevated and declining victimization and aggression); Increasing Victimization, Stable Aggression; and Decreasing Victimization, High Aggression. These classes were consistent with the behavioral theory of peer victimization. Class membership was predicted by gender, friend status (whether a child has a mutual friend), and friend characteristics (withdrawal and aggression). Patterns and implications for intervention are discussed.

PEER VICTIMIZATION AND AGGRESSION ACROSS ELEMENTARY SCHOOL

by

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CHAPTER I

INTRODUCTION

The goal of the current paper is to address research gaps in the study of peer victimization, particularly in terms of understanding the longitudinal development of peer victimization. There are several theories of the development and process of peer victimization (described in further detail below), but the current study is driven by the behavioral theory of peer victimization. This theory suggests that children become chronic victims based on whether aggressors find bullying them to be rewarding (Perry, Hodges, & Egan, 2001; Smith, Shu, & Madsen, 2001). The behavioral theory in particular deserves further empirical attention, because it focuses on proximal causes of peer victimization. Although there may be many relevant distal factors, those factors (e.g., parenting) may not be as easily addressed through school interventions, which is the primary mode of alleviating peer victimization (Elias & Zins, 2003).

The current study tests specific hypotheses arising from the behavioral theory that have not had sufficient empirical attention. First, the role of a child's aggression in the development of his or her peer victimization has not been well articulated, and the empirical evidence is unclear. Second, the behavioral theory has focused primarily on the child's own responses to instances of peer victimization

and has neglected the role of other peer factors – particularly friendship and general peer acceptance. Thus, the current study modeled trajectories of peer victimization and aggression over elementary school and tested friendship and peer acceptance as predictors of membership in trajectory classes.

Background

Peer victimization is typically defined as repeated exposure to negative actions on the part of one or more people, often involving a real or perceived imbalance in strength or power (Camodeca, Goossens, Meerum Terwogt, & Schuengel, 2002; Olweus & Baenninger, 1991). Peer victimization includes but is not limited to verbal victimization (e.g., name-calling, threatening), physical victimization (e.g., pushing, kicking), ostracism (e.g., refusing to allow a child to play), and other types of relational victimization (e.g., spreading rumors; Crick, Casas, & Nelson, 2002; Storch & Ledley, 2005). Peer victimization is ubiquitous in schools, with over 75% of children and adolescents reporting being harassed by peers within the previous year (Glover, Gough, Johnson, & Cartwright, 2000; Hoover, Oliver, & Hazler, 1992). Approximately 10% of children are identified as chronically, frequently, or severely victimized by their peers (Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Sheidt, 2001). Furthermore, peer victimization is associated with many negative outcomes, including internalizing symptoms (e.g., Davidson & Demaray, 2007), externalizing symptoms (e.g., Garner & Lemerise, 2007; Salmivalli & Helteenvouri, 2007), school avoidance (Kochenderfer & Ladd,

1996), and school failure (Hanish & Guerra, 2002). As such, peer victimization is a public policy issue and a major concern to school officials (Olweus, 2001).

The study of peer victimization has not had a strong theoretical drive. Many studies have focused on correlates of peer victimization (e.g., Davidson & Demaray, 2007; Ladd, Kochenderfer, & Coleman, 1997), gender differences in peer victimization (e.g., Demaray & Malecki, 2003; Putallaz, Grimes, Foster, Kupersmidt, Coie, & Dearing, 2007), and prevalence rates (e.g., Nansel et al., 2001). Theoretical and empirical interest in the development and process of peer victimization is a newer area of interest. Theories addressing the development and process of peer victimization can be categorized into the three main groups: behavioral (e.g., Smith et al., 2001), group dynamics (e.g., Salmivalli, 1999), and sociocognitive (e.g., Perry et al., 2001). These theories differ in the degree to which the individual versus the group is emphasized and the degree to which proximal versus distal causes are emphasized.

Sociocognitive. Parental factors have been implicated as risk factors for peer victimization in several studies (Beran & Violato, 2004; Finnegan, Hodges, & Perry, 1998; Georgiou, 2008; Ladd & Ladd, 1998; Reavis, Keane, & Calkins, 2010; Schwartz, Dodge, Pettit, & Bates, 2000). Researchers have suggested that a sociocognitive process is responsible for this association. Specifically, researchers have pointed to evidence that suggests that maternal over-control prevents children from developing feelings of self-competence (Rosen, Milich, & Harris, 2007), regulatory skills (Rubin, Coplan, Fox, & Calkins, 1995), and other social skills. Perry

and colleagues (2001) suggest that children with over-controlling and intrusive mothers (fathers are rarely studied) come to develop a “victim schema,” whereby they view parents as threatening and controlling and view themselves as helpless and unable to influence their environments. This victim schema is then activated when children are confronted with similar controlling and threatening behavior in their peers, causing the children to behave submissively. Although the correlation between parental control and peer victimization has been demonstrated, the proposed processes have not received enough empirical attention to determine whether “victim schemas” play an important role in the development of peer victimization.

Finnegan and colleagues’ (1998) sociocognitive theory is even more specific and proposes that parenting behavior influences children differently based on gender. Controlling or rejecting parenting is posited to decrease gender-normative competencies, which lead to victimization. Competency for girls is defined as succeeding at communal behaviors, such as empathy, sharing, and cooperation; whereas, competency for boys is defined as succeeding at rough-and-tumble play, assertive behaviors, and exploration. This theory predicts that maternal over-control will lead to victimization for boys, because it interferes with the development of independence and assertive behaviors. For girls, maternal rejection will lead to victimization, because it interferes with the development of empathy and cooperation.

Although Finnegan and colleagues (1998) found support for this theory, based on child reports of parenting and peer reports of victimization, broader empirical support for the theory is ambiguous. Ladd and Ladd (1998) found that intense closeness between mothers and their sons was positively related to sons' rates of peer victimization, and that no such relationship was found for girls. Others, however, have found that over-control was associated with victimization for both boys and girls (Georgiou, 2008; Schwartz et al., 2000). Beran and Violato (2004) reported a very small effect ($r = .14$) of maternal control on victimization, and did not report analyses on gender differences. Rigby, Slee, and Martin (2007) reported a small association between parental (maternal and paternal) control and victimization for girls only. This study was, however, limited by over-reliance on self-report.

Finnegan and colleagues (1998) and Schwartz and colleagues (2000) both reported that maternal hostility was associated with peer victimization for girls only. However, more extreme hostility, in the form of violence (perpetrated either against the child or simply in front of the child) is associated with peer victimization for both boys and girls (Mohr, 2006; Schwartz et al., 2000). Non-aggressive ("pure") victims, aggressive victims, and aggressive non-victims all appear to have higher rates of exposure to family violence (Mohr, 2006), suggesting that family violence is a non-specific predictor of social maladjustment.

The evidence suggests that parental control and hostility are related to peer victimization. However, the gender patterns are not clear, and the associations

seem weak at best. Further, there is little evidence that addresses the veracity of sociocognitive theories as an explanation for the associations. Although these theories deserve more empirical attention, the more pressing empirical concern is to understand more proximal processes in the development of peer victimization. Intervening in family relationships prior to and during the school years is a more daunting task than intervening in school. Furthermore, many states have laws requiring schools to have established responses to and prevention for bullying (Hazelden Foundation, n.d.). These mandated programs will be implemented in the schools; thus, proximal causes and processes should be the research priority.

Group Processes. Salmivalli and colleagues (e.g., Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996; Salmivalli & Voeten, 2004; Salmivalli, Kärnä, & Poskiparta, 2010; Salmivalli, 2010) have demonstrated that group processes are important in understanding how peer victimization unfolds in the classroom. Using the participant role approach (e.g., Salmivalli et al., 1996), they have shown that peer victimization is broader than a bully-victim relationship and that children assume various roles other than bully or victim, including assistants (children who actively join in the aggression against a victim), reinforcers (children who encourage, through verbal or non-verbal means, the aggression against a victim), defenders (children who intervene on behalf of the victim), and outsiders (children who are uninvolved in the aggression situation.) Furthermore, they have shown that in classrooms where there are more defenders, there is less

victimization, particularly for children who are the most vulnerable (Kärnä, Voeten, Poskiparta, & Salmivalli, 2010).

Some anti-bullying interventions have used this framework and have targeted bystander behavior in the attempt to alleviate peer victimization (e.g., Salmivalli et al., 2010). This line of research is valuable and productive; however, there are several issues that the participant role approach does not address. First, Salmivalli and colleagues have treated these roles as personality traits, rather than as context-dependent. That is, they classify children in each of the participant roles based on peer nominations (e.g., Salmivalli, 2001), rather than examining the situations in which children might assume each type of role. Second, the participant role approach offers a description of the process in victimization situations, but it is silent on longitudinal and individual difference questions. How and why do particular children emerge as victims and how can we predict who becomes a chronic victim? The behavioral approach can be used to address these issues.

Behavioral. Theorists have proposed that children become (or do not become) victims based on whether aggressors find bullying them to be rewarding (Perry et al., 2001; Smith, et al., 2001). Smith and colleagues (2001) suggest that this process explains the decline in peer victimization observed across elementary school. Specifically, they propose that within larger peer groups, some in more dominant positions may take advantage of their situation (and attempt to secure it) by targeting other children. Aggressors are somewhat non-specific in their choice of targets at first (Smith et al., 2001) and through a series of rewards and punishments,

selectively aggress against specific children. Unlike the sociocognitive approach or the participant role approach, the behavioral approach focuses on proximal causes and can be used to understand changes and patterns in peer victimization over time.

Veenstra and colleagues (e.g., Veenstra, Lindenberg, Zijlstra, DeWinter, Verhulst, & Ormel, 2007) do not use strictly behavioral terms, but they have also suggested that bullies are motivated by two goals: domination and social approval, with domination being the primary goal. In fact, bullies tend to hold dominant positions in the class, whereas victims are more likely to be described as vulnerable and rejected (Veenstra et al., 2007). Bullies are likely to behave in ways that help them to reach their goals; thus, they are more likely to continue to target the children whose victimization helps the aggressors to achieve their social dominance goals.

Although there are substantial gaps in this line of research, there is also ample evidence that supports some of the notions of the behavioral approach. The behavioral approach suggests that there are at least two main sources of rewards and punishments for aggressing against specific children. The category that has received the vast majority of empirical attention is that of children's own behavioral responses to victimization (e.g., Salmivalli, Karhunen, & Lagerspetz, 1996; Smith et al., 2001). However, the responses of other peers (Boulton & Chau, 2005) also seem important. Factors that likely influence the responses of other peers to a child's victimization include the child's overall social standing (peer acceptance) and the

child's friendships, including whether they have a close friend and the identity of that friend (e.g., Browning, Cohen, & Warman, 2003; Hodges & Perry, 1999).

Researchers have identified several types of individual responses to peer victimization that seem maladaptive – that is, they are more common among victimized children or have been shown to increase or prolong victimization. These maladaptive responses can be categorized into two general categories: submissive (Mohr, 2006; Smith et al., 2001) and counter-aggressive (Kochenderfer & Ladd, 1997; Salmivalli et al., 1996). Maladaptive submissive responses include acquiescing (e.g., relinquishing a desired toy to an aggressor), submissive nonverbal behaviors (e.g., lowering eyes), crying, and running away. Submissive responses tend to have the paradoxical effect of both ending and extending the victimization. That is, submissive responses end the conflict in the moment, but increase the likelihood that the child will be targeted in the future (Perry et al., 2001), which is consistent with the behavioral theory.

Aggression. The role of aggression as a response to victimization is less clear and deserves more attention. Several studies have suggested that counter-aggressive retaliation is also a maladaptive response, in part because it tends to be reactive, unorganized, and ineffective (Schwartz, Dodge, Pettit, & Bates, 1997). Counter-aggressive responses tend to prolong the victimization situation (Salmivalli et al., 1996) and are associated with more peer victimization over time (Kochenderfer & Ladd, 1997). Victims are also more likely than non-victims to endorse retaliatory responses (e.g., Elledge, Cavell, Ogle, Malcolm, Newgent, & Faith,

2010; Kochenderfer-Ladd, 2004; Mahady Wilton, Craig, & Pepler, 2000; Visconti & Troop-Gordon, 2010).

Researchers have interpreted this evidence as suggesting that aggression is necessarily an ineffective way to respond to peer victimization. However, there are at least three problems with this premature conclusion. First, much of this work uses cross-sectional (e.g., Perren & Alsaker, 2006) or, less commonly, short-term longitudinal designs (e.g., Ostrov, 2010), making conclusions about the long-term effects of aggressive responding inappropriate. Second, the behavioral theory of peer victimization suggests that aggressors will not continue to target children whose victimization does not reward the aggressor. Although reactive, disorganized counter-aggression may not discourage aggressors and may, in fact, reward them by amusing them or validating their dominant position, we would expect *some* children to be able to respond with strength and organized aggression. In fact, one strong predictor of peer victimization for boys is physical strength, with physically weak boys being at higher risk for peer victimization (e.g., Nishina, Ammon, Bellmore, & Graham, 2006). Thus, some children's (although certainly not all) aggressive responses should signal to the aggressor that further targeting of those children would put the aggressor at risk, both physically and socially. This possibility, however, has not been examined.

The third problem is that the current research regarding the co-occurrence of aggression and victimization is far from clear and requires further investigation. Some researchers report no concurrent association between peer victimization and

externalizing problems (Goodman, Stormshak, & Dishion, 2001; Perren & Alsaker, 2006; Perry, Kusel, & Perry, 1988; Veenstra et al., 2007), whereas others report associations both in early (Garner & Lemerise, 2007; Lamarche, Brendgen, Boivin, Vitaro, Dionne, & Perusse, 2007) and late elementary school (Salmivalli & Helteenvouri, 2007). The heterogeneous population of peer-victimized children may partially explain the discrepant results with regard to externalizing behaviors. Researchers have identified at least two subgroups of peer-victimized children: non-aggressive victims and aggressive victims (Boulton & Smith, 1994; Olweus & Baenninger, 1991). Aggressive victims have also been referred to as provocative victims and bully-victims (Olweus, 1978; Perry et al., 2001; Schwartz, Proctor, & Chien, 2001), whereas non-aggressive victims have been called passive victims, pure victims, and “whipping boys” (Olweus, 1978; Perry et al., 2001). Aggressive victims have a unique profile characterized primarily by emotion dysregulation and externalizing problems (Schwartz et al., 1997). This group of children tends to have significantly more adjustment problems compared to either pure victims (i.e., non-aggressive victims) or aggressive non-victims (Schwartz et al., 2001), although these groups also have marked adjustment problems. Aggressive victims, however, appear to be distinct from both aggressive non-victims and pure victims, in terms of their behavioral profile (emotion dysregulation) and risk for negative outcomes (greater risk). Thus, the co-occurrence of aggression and victimization is clearly problematic. Again, aggressive victims may be those children who are responding to aggression in disorganized and ineffective ways.

Examining longitudinal patterns of peer victimization and aggression together may help to unravel some of these inconsistencies as well as to inform our understanding of the behavioral model of the development of peer victimization. Very few studies have examined whether aggression and victimization co-vary longitudinally. One recent study (Visconti & Troop-Gordon, 2010) showed that in late elementary school, retaliatory responding predicted increases in victimization one year later. However, this association was quite weak ($\beta = .14$), suggesting that there are many children who do not fit this pattern. The empirical evidence combined with the behavioral theory of peer victimization suggests that there should be a group of children whose aggression is coupled with declining levels of victimization across elementary school. Rather than using one variable to predict another, the current study models changes in both aggression and victimization over time to test whether patterns predicted by the behavioral model exist.

Peer Context. Given that peer victimization is embedded in the larger peer context, it is reasonable to assume that peer factors will also be related to peer victimization. Two possibilities are general peer acceptance and dyadic friendships. Both peer acceptance and friendship are implicated in the emergence and persistence of peer victimization (e.g., Pellegrini & Long, 2002; Veenstra, Lindenberg, Munniksma, & Dijkstra, 2010). Although most research guided by the behavioral theory of peer victimization has focused on children's own responses, *any* factor that encourages or discourages aggression against a specific child would be implicated in the development of peer victimization. Having friends and being

well liked may both be deterrents to potential aggressors, and should be related to long-term patterns of peer victimization.

Although peer acceptance and friendship are highly correlated (Parker & Asher, 1993), they have consistently been shown to be distinct constructs that are independently associated with children's adjustment (Parker & Asher, 1993). Peer acceptance is the degree to which the larger peer group has a positive attitude toward a specific child. Dyadic friendship, on the other hand, is based on *mutual* liking and is typically characterized by more interactions, which are often of a higher quality than those between non-friends, even for young children (Ladd, 2005). There are children, for example, who are viewed favorably by the peer group, but who have no close dyadic friendships. Conversely, there are children who are disliked by the larger peer group, but who have formed close friendships with others.

High peer acceptance may serve to discourage chronic peer victimization in at least two ways. First, peer victimization is less likely in cases where there are many "defenders," or children who are willing to intervene in conflict situations to protect the victim (Salmivalli, 2001). The intervention of others in victimization situations teaches potential aggressors that they may face consequences if they aggress against a specific child. Intervention in peer victimization is not uncommon, but children do so at risk to their own safety and social standing in the peer group. Thus, they are unlikely to make this sacrifice for disliked children—in fact, they may tacitly approve of the victimization of a disliked child, whom they see as deserving

of the treatment (Gini, 2008; Hymel, 1986). Second, regardless of whether peers intervene in victimization situations, the peer group is more likely to disapprove of the victimization of highly accepted children. Although the aggressor may not always face immediate consequences of intervention in a victimization situation, the disapproval of the larger peer group may still discourage aggression against a favored child. For example, the peer group may begin to withdraw from and exclude the aggressor, which may discourage further aggression against that child. In fact, there is evidence that bullies target children who are rejected by subgroups that are important to the aggressor. For example, boys tend to bully children who are rejected by boys (whether the targets are boys or girls), but the extent to which a child is rejected by girls is not related to victimization by boys (Veenstra et al., 2010). Thus, according to the behavioral theory of peer victimization, children with high peer acceptance should experience low and declining levels of peer victimization across time.

Friendship may also be uniquely related to trajectories of peer victimization in a number of ways. Although adult notions of friendship in terms of intimacy are more prevalent in older elementary children, friendships are important even for young children (Ladd, 2005; Ladd et al., 1997; Linsey, 2002), who rely on their friends for support. For example, kindergartners with mutual friends are more likely to succeed in the transition from pre-school to elementary school. Simply having a mutual friend may discourage peer victimization. As stated above, having someone who will intervene in peer victimization situations on your behalf is

important. Mutual friends may be more motivated than acquaintances to intervene on a child's behalf. In fact, supporting and protecting one's friends is seen as an important aspect of friendship, even among younger children (Avgitidou, 2001). However, friends provide more benefits to children than direct intervention. Friends provide emotional support, which may help children to develop appropriate coping skills in the face of victimization. Socially competent coping skills can discourage chronic victimization (e.g., Hunter & Boyle, 2004).

Finally, conflict is common within friendships, even in the context of high quality friendships (Ladd, 2005). As children learn to negotiate conflict within friendships, they develop important conflict negotiation skills, which can later be used to diffuse other peer conflict situations and prevent them from devolving into ongoing peer victimization. Thus, we would also expect the presence (or absence) of a mutual friendship to be associated with peer victimization trajectories, such that friended children (those with a mutual friendship) are more likely to experience low and declining levels of peer victimization. Moreover, given the distinctions between peer acceptance and friendship, we would expect mutual friendship to provide unique predictive information even when including general peer acceptance.

Friendship is, of course, more complex than the simple presence or absence of a friend. The characteristics of one's friends may have a great influence on adjustment. The current study examines two characteristics of children's friends: withdrawn behavior and aggressive behavior. Children who are shy, weak, or

withdrawn may be unable—even if they are motivated—to intervene on their friends' behalf. In fact, we know that the friends of victims tend to be more shy and withdrawn than average, even when they are not victimized (Perry et al., 2001). Thus, children who have friends who are characterized by shy or internalizing behavior may be more likely to experience high/stable or increasing levels of peer victimization.

Friends' aggression is also expected to predict peer victimization trajectories. However, there are at least two possibilities. First, children with aggressive friends may be more likely to have declining trajectories. Aggressive friends may be highly motivated to intervene on their friend's behalf; moreover, their intervention may actively discourage victimization. Potential aggressors may fear retaliation by the aggressive friend, and thus avoid targeting that child. On the other hand, children with aggressive friends may be more likely to be aggressive victims. Aggressive children tend to befriend one another (Estell, 2007), and dysregulated children often have friends who are similarly dysregulated (Mariano & Harton, 2005). Thus, the effect of homophily may result in friends' aggression predicting high/stable or increasing trajectories of both aggression and victimization.

Gender. Gender is another factor that is likely to be important in the development of peer victimization and, in particular, may moderate the peer predictors of peer victimization trajectories. However, the existing literature on gender differences in peer victimization is mixed. Some researchers have found that boys are more likely than girls to be victims (e.g., Lamarche et al., 2006; Perry et al.,

1988; Putallaz et al., 2007), some have found no gender differences (e.g., Davidson & Demaray, 2007; Kochenderfer-Ladd & Skinner, 2002; Salmivalli & Helteenvouri, 2007), and a very few have found that girls are more likely to be victims compared to boys (e.g., Dempsey, Fireman, & Wang, 2006; Murray-Close & Crick, 2006).

The empirical issues surrounding the co-occurrence of aggression and victimization may be relevant to the inconsistent findings regarding gender and victimization. Some researchers consider non-aggressive victims separately from aggressive victims, whereas others make no such distinctions. When aggressive victims are excluded, boys and girls self-report similar rates of victimization (Mouttapa, Valente, Gallaher, Rohrbach, & Unger, 2004; Pellegrini, Bartini, & Brooks, 1999; Veenstra et al., 2007), as do teacher and peer reporters (Perren & Alsaker, 2006; Veenstra et al., 2007). However, boys are more likely than girls to be classified as aggressive victims (Mouttapa et al., 2004; Perren & Alsaker, 2006). Studies reporting less victimization among girls compared to boys typically do not distinguish between non-aggressive and aggressive victims (Dempsey et al., 2006; Murray-Close & Crick, 2006; Putallaz et al., 2007). Thus, it appears that boys are slightly more likely to be classified as aggressive victims (Mouttapa et al., 2004; Perren & Alsaker, 2006) compared to girls. However, boys and girls seem equally likely to be classified as non-aggressive victims (Veenstra et al., 2007). Gender differences have not been examined longitudinally when both aggression and victimization were included. Thus, including gender when modeling both aggression and victimization trajectories may help address these issues. We would

expect trajectories characterized by high or increasing levels (or both) of aggression to be more common among boys, whether the aggression is coupled with victimization or not.

Peer factors are also important to consider when examining gender patterns in victimization and aggression trajectories. For example, as the role of peer relationships becomes more central in late elementary school, girls in particular may be at greater risk for victimization that can arise in the context of friendships (Crick & Nelson, 2002). Although victimization is often considered to be a phenomenon that occurs between two non-friends, victimization can occur between two current—or more frequently, former friends (Daniels, Quigley, Menard, & Spence, 2010). Research demonstrates that girls tend to have friendships of higher quality than those of boys (e.g., Underwood, 2007), so it might seem counter-intuitive that friendships would be more likely to lead to victimization for girls. However, emerging research is beginning to suggest that researchers' definitions of quality may favor girls' friendships over those of boys' and that boys may actually be more *satisfied* with their friendships compared to girls (Ladd, 2005). Furthermore, girls report higher levels of stress in their friendships (Benenson & Christakos, 2003; Ladd, 2005), and there is evidence that girls' friendships are more fragile and of shorter duration compared to those of boys. For example, a higher proportion of 5th grade girls compared to boys report that their friend has done something to damage the relationship, even though girls' friendships are typically of shorter duration than boys (Besag, 2006). Moreover, girls report more jealousy in their

friendships, which can lead to victimization within the friendship or dissolution of the friendship (Casper & Card, 2010). As children's friendships end, they may pursue revenge goals, particularly through the use of relational aggression (Rose & Asher, 1999). These patterns of behaviors may result in girls being more likely to have increasing trajectories of victimization compared to boys.

Gender may also interact with peer variables to predict class membership. Girls expect friends to provide more support (Rose & Asher, 2004), including instrumental support such as defending a child against victimization. Girls' friends may be more likely, due to this expectation, to intervene on a child's behalf. Furthermore, defending behavior is more common among girls than boys (Sainio, Veenstra, Huitsing, & Salmivalli, 2011). Thus, we might expect friendship to be more strongly related to class membership for girls compared to boys.

Limitations of Existing Longitudinal Studies

As mentioned previously, our understanding of peer victimization suffers from a paucity of longitudinal research. The longitudinal work that exists has focused on elementary school, generally examining the late elementary or middle school years (Browning et al., 2003; Camodeca et al., 2002; Goldbaum, Craig, Pepler, & Connolly, 2003; Smith, Talamelli, Cowie, Naylor, & Chauhan, 2004). Exceptions are work by Kochenderfer-Ladd and colleagues, who have studied peer victimization in early elementary school (K-3rd grade; Kochenderfer-Ladd, 2003; Kochenderfer-Ladd & Wardrop, 2001). Barker and colleagues (Barker, Boivin,

Brendgen, Fontaine, Arseneault, Vitaro, Bissonnette, & Tremblay, 2008) also examined peer victimization in a longitudinal study through 1st grade.

The existing work has demonstrated the importance of examining chronic versus transient peer victimization. Specifically, these types of studies have shown that chronic victims are at greater risk for both short-term and long-term adjustment problems (e.g., Kochenderfer-Ladd & Wardrop, 2001; Olweus, 1992). However, there are several limitations to this work. First, most of these studies use cut-off scores to determine group membership (see Barker et al., 2008 for an exception). The drawback to this approach is that it increases classification error, particularly for children whose scores fall just above or below the cut-off. These classification errors decrease the power to detect predictors or outcomes of the classes (e.g., victim/non-victim).

Second, a majority of these studies have used only two time points. The problem with this approach is that developmental trends that unfold over the course of elementary school are difficult if not impossible to identify. Furthermore, using two time points with cut-off scores does not allow us to determine whether children's peer victimization scores are increasing or decreasing, even if they stay within the same category (e.g., non-victim). That is, the normative experience of peer victimization is not captured in these approaches. Nor does it allow us to examine potential non-linear trends. For example, although peer victimization appears to be declining across elementary school, there appear to be higher levels of peer victimization in middle school using both peer-reports and self-reports

(Demaray & Malecki, 2003; Smith et al., 2001). Thus, we might expect a non-linear trend such that peer victimization decreases during early elementary school, but turns and begins to increase in 5th grade, as children prepare to enter middle school.

Third, no study to date examines the longitudinal changes in peer victimization across the elementary school years. Existing studies focus either on early or on late elementary school, but fail to bridge the two age groups. One reason that researchers often focus on later elementary school is that peer victimization at younger ages is often less stable than at later ages (Kochenderfer-Ladd & Ladd, 2001). However, as Kochenderfer-Ladd and Waldrop (2001) discuss, it is critical to examine and understand peer victimization while there is still a significant chance children can transition out of the victim status. Moreover, it is important to bridge these two time periods. For example, a single longitudinal study that bridges these time periods could help us determine whether there are children who do not face significant peer victimization at younger ages, but emerge as victims in late elementary school, just as they are preparing to enter middle school. This type of pattern would only be captured with a design that includes both early and late elementary school.

Present Study

The current study was designed to test several research questions arising from the behavioral theory of the development of peer victimization:

1. What is the pattern of aggression and victimization trajectories across elementary school for most children, and is this pattern consistent with the

behavioral theory? In other words, what trajectories characterize a normative pathway?

2. What are other, less common (non-normative) patterns of trajectories of aggression and victimization across elementary school, and are these patterns consistent with the behavioral theory?
3. Do boys and girls have distinct longitudinal patterns of aggression and victimization?
4. Can we predict a child's trajectories based on peer factors, such as friendship and peer acceptance? Do these predictions differ based on gender? Are these predictions consistent with the behavioral theory of peer victimization?

To answer these questions, the current study used data across the elementary years (kindergarten, 1st, 2nd, and 5th grades) to model classes of children based on their peer victimization and aggression trajectories and to test predictors (peer acceptance and friendship) of membership in these classes. Latent Class Growth Modeling (LCGM), which is a special case of structural equation mixture models (SEMM), is a person-centered approach that was employed to identify classes of children who differ based on their trajectories of victimization and aggression over time. There are several advantages to using an LCGM approach. First, LCGM uses a maximum likelihood estimation. This allows all longitudinal observations in the data set to be used to estimate the parameters (Little & Rubin, 2002), and is an appropriate way to accommodate missing data (Schafer & Graham,

2002). Second, LCGM is not based on decision rules, but is more flexible (Everitt & Hand, 1981) and is probabilistic. Rather than assigning children into groups based on cut-off scores or decision rules, the statistical package (MPlus) calculates the probability of membership in each group (i.e., class). An individual is not assigned to a specific class, but has a probability for being in each identified class; thus, in a 3-class model, each individual would have three separate probabilities of being in each class. The predictors are included in the model simultaneously and the probabilities of class membership and the effect of the predictors on this probability are estimated in the same analysis. This approach is an improvement over extreme group cut-off approaches or decision rule approaches (e.g., cluster analysis) because it reduces the classification errors that can arise from these approaches.

However, this approach is also useful at a descriptive level (i.e., suggesting how many children might fall into the identified classes). As long as the identified model has acceptable entropy, meaning that participants have a high probability of being in one class and a low probability of being in other classes, the model can be used to suggest what percentage of children might be in each of the longitudinal classes. Having a strong understanding of the percentage of children who fit various at-risk potential classes (e.g., high declining, moderate increasing, high stable) will inform targeted prevention and intervention programs (see Solberg & Olweus, 2003).

This study does not directly assess responses to peer victimization, either by victims themselves or by their friends or other peers. However, the behavioral

theory leads to specific and testable hypotheses about longitudinal patterns of aggression and victimization and the prediction of these patterns by gender, friendship, and peer acceptance. Based on the literature reviewed previously, several hypotheses are proposed.

1. Most children will follow a class characterized by low or moderate initial levels of peer victimization and aggression with decreases in both across elementary school. The prediction is consistent with previous empirical work suggesting an overall decline in victimization and aggression during this developmental period (Kokko, Tremblay, Lacourse, Nagin, & Vitaro, 2006; Smith et al., 2001). It is also consistent with the behavioral theory that suggests that aggressors begin to target children selectively, meaning that other children receive less victimization over time.
2. There will be a class characterized by high, stable or increasing trajectories of both aggression and victimization. This class would be consistent with the prediction that children who respond to victimization with disorganized and dysregulated aggression make desirable targets for aggressors and would continue to be victimized over time.
3. There will be a class characterized by low or decreasing aggression coupled with high/stable or moderate/increasing peer victimization across elementary school. This class would be consistent with the prediction that some children respond not with aggression, but with submission and acquiescence. This submission signals to aggressors that targeting these

children is likely to result in rewards for the aggressive behavior; thus, these children will continue to be victimized over time.

4. There will be a class characterized by high initial levels of aggression and low stable or moderate decreasing victimization. The behavioral theory suggests that circumstances that discourage aggressors should result in decreased victimization. Although some children may respond in aggressive ways that are ineffective (see Hypothesis 2), it would be surprising if there were not children whose counter-aggression was a threat to and deterred potential bullies. This hypothesis has not been tested in the literature. If it does not exist, then that fact would bring into question the validity of the behavioral theory of peer victimization.
5. Boys should be more likely than girls to be in classes characterized by aggression, based on cross-sectional work cited previously.
6. Girls might be more likely to be members of classes characterized by increasing victimization compared to boys, although this hypothesis is more speculative. Peers are increasing in importance for both boys and girls during this period, but this increase is larger for girls. In particular, girls place more emphasis on their friendships, although these friendships may be more fragile than those of boys, and victimization for some girls may increase as a result of the dissolution of friendships.

7. Peer acceptance and friendship will be unique predictors of class membership, based on extensive evidence that they are distinct constructs, despite overlap.
8. Peer acceptance will positively predict membership in the low decreasing victimization classes. Children who are highly accepted by their peers may have more defenders available to them. Furthermore, the larger peer group may disapprove of victimizing a well-liked child, and thus indirectly discourage victimization.
9. Having friends will positively predict membership in low decreasing victimization classes. Children with close, mutual friendships are more likely to have potential defenders. Furthermore, they likely have more opportunities to build the kinds of skills that will help deter victimization.
10. Withdrawn behavior in close friends will positively predict membership in classes with increasing victimization. A friend's ability to intervene on a child's behalf may be influenced by the friend's own behavioral characteristics, and a withdrawn friend may be unable to intervene in a victimization situation.
11. Part A: Aggressive behavior in close friends will positively predict membership in classes with declining victimization. Aggressive friends may be more motivated and able to intervene on a child's behalf. Potential aggressors may fear retaliation by the friend, and thus not target the child.

Part B: Aggressive behavior in close friends may also positively predict membership in aggressive classes. There is evidence that there is homophily among aggressive children and that aggressive and dysregulated children befriend one another.

12. Gender will interact with friendship variables to predict class membership, such that friendship will be more strongly related to class membership for girls compared to boys. Girls have greater expectations of friend support than do boys, and defending behavior is more common among girls.

In conclusion, the goal of this study is to model classes based on longitudinal trajectories of both victimization and aggression. The goal is to provide information about both normative and non-normative classes. Our knowledge of victimization, particularly the development of victimization across time, is limited by the heterogeneous nature of victimization. The inclusion of aggressive trajectories should help to clarify our understanding. This study will also inform our knowledge of the development of peer victimization by testing whether gender and other peer factors can predict class membership. This information will be helpful at both a theoretical and an applied level.

CHAPTER II

METHOD

Participants

Interviews were conducted as part of the ongoing longitudinal study, the Right Track (RT) project. As RT participants (original $N = 447$) entered grade school, sociometric interviews (described below) were conducted with all of the children's consenting classmates (K-2nd) or grademates (5th). Although no attempts were made to collect longitudinal data from non-RT participants, many of these children provided data on more than one occasion, because they were in the same classroom or grade as an RT participant during multiple years. Participants in the current report were 2624 children who participated in these sociometric interviews in kindergarten. Of these children 623 were assessed in first grade, 650 were assessed in second grade, and 788 were assessed in fifth grade. In total, 729 children contributed data at two time points, 417 children contributed data at three time points, and 166 contributed data at all four time points. SEMM is capable of handling this level of missing data (Lanza, Flaherty, & Collins, 2003) in the over-time data. However, when predictors are added to the models, any case missing the predictor variable is deleted from the analysis. For this reason, only children who provided data in kindergarten were included.

Sociometric data were collected in 4 cohorts. The first data collection was completed with kindergartners in 1999, and a second set of kindergartners participated in 2000. These data correspond to the first RT cohort. In 2002, a third set of kindergartners participated, corresponding to the first half of RT cohort 3. Finally, in 2003, a fourth set of kindergartners participated, corresponding the second half of RT cohort 3 and all of RT cohort 2.

Procedures and Measures

Consent for sociometric interviews was obtained from the local superintendent, the principal, the teacher, and the parents of children in the class. Only children whose parents provided consent were included in the sociometric assessment. A small incentive such as a pencil was given to all children who returned a consent form, whether it said yes or no. Furthermore, all children gave assent prior to the sociometric interview. Trained graduate students conducted sociometric interviews at every grade (K, 1st, 2nd, & 5th) following standard sociometric practices (see Coie, Dodge, & Coppotelli, 1982). In kindergarten, first grade, and second grade, children were individually interviewed. They were presented with a class roster and asked to indicate classmates (by pointing to a picture of the student) who fit a descriptor. In fifth grade, children were interviewed in a group and were presented with a roster of children in their grade who were participating. Questions were read aloud to the entire class, and children indicated which children in their grade fit descriptors by filling in a circle next to those children's names. For each descriptor, children were permitted to select as

many or as few classmates (grademates) as they wanted (by pointing to pictures of classmates or selecting from a printed roster), but were encouraged to select at least three classmates (grademates). Because peer nomination data uses information from multiple reporters, the reliability of single- item peer nomination scales tends to be quite high (Coie, Dodge, & Kupersmidt, 1990).

Two descriptors were measured at each time point: peer victimization and aggression. For *peer victimization*, children were told, “Some kids get picked on and made fun of by other kids. They get teased or get called names. Who gets picked on and teased by other kids?” For *aggression*, children were told, “Some kids start fights when someone else does something to make them mad. Who are the kids in your class (grade) who start fights when someone does something to make them mad?” Typically, this type of data is standardized within classrooms; however, this procedure sets the mean to zero at every time point, making it difficult to detect change over time. Thus, proportions of classmates who selected a child as “picked on or teased” or “someone who starts fights” were used as the score. This procedure corrected for variations in class size, but allowed us to model change over time.

Several measures were examined in kindergarten only, as predictors of membership in classes of peer victimization trajectories. *Peer acceptance* was measured in kindergarten, and involved asking children to nominate classmates whom they “liked most” and “liked least.” Children were not limited in the number of selections they made as they were in Coie et al. (1982). The unlimited method allows for more reliable results and a reduction in measurement error (Terry, 2000)

and is considered standard. Furthermore, this increased precision can be achieved with fewer classmates than are needed for the limited-choice nominations. Cross-gender nominations were permitted (unlike Coie et al., 1982) to increase the stability of measurement for the nominations to determine peer status. Again, cross-gender nominations are now considered standard. As peer acceptance at one time point, rather than multiple time points, was included, the total number of nominations for “like most” and “like least” were standardized to obtain two separate z-scores, which were subsequently subtracted to compose a *social preference score* ($z \text{ “like most”} - z \text{ “like least”} = \text{social preference}$; Coie et al., 1982). Following Coie et al. (1982), social preference was again standardized within classrooms after computing the difference score. Lower scores represented less likeability or overall peer status in the classroom, whereas higher scores represented greater likeability. This is a widely used technique for assessing a child’s overall likeability or peer acceptance within the classroom (Jiang & Cillessen, 2005).

Friend status (whether a child has a mutual friend) was also assessed in kindergarten. For this measure, children listed only the top three children they liked most. Children with at least one mutual nomination were coded as having a friend (friended). Children with three unreciprocated nominations were coded as having no identified friends (friendless). No child selected fewer than three classmates they liked to “play with a lot.” Limited, rather than unlimited friendship nominations, were used because we were interested in children’s close relationships.

Friend aggression was measured using the same question as stated above. However, it was measured only in kindergarten. Furthermore, a z-score was used, as with peer acceptance. As children can have from 0-3 mutual friends, friend aggression was calculated by taking an average score of the identified mutual friends, following Berndt (1993). In the current sample, 33% of children did not have a mutual friend, which is consistent with previous research (Parker & Asher, 1993). Thus, this measure was for the 67% of participants who had at least one identified friend.

Finally, for *friend withdrawal*, children were told, "Some kids act really shy around other kids. They play alone and work alone most of the time. They seem to be afraid to be around kids. Who are the kids in your class (grade) who are shy and act afraid to be around others?" The score was calculated in the same manner as friend aggression.

Data Analysis Goals

A structural equation mixture model (SEMM) was used to investigate patterns of longitudinal trajectories of victimization and aggression across elementary school. SEMM models qualitatively different groups (classes) when group membership cannot be directly observed (Bauer & Curran, 2004). Specifically, a latent class growth model (LCGM) was used to estimate classes (Kreuter & B. Muthén, 2008). Traditional growth modeling is a special case of LCGM with only one class. In growth modeling and LCGM, parameters for the intercept and slope (for a linear trajectory) are estimated as latent variables. In LCGM, similar

to latent class analysis, a categorical latent variable, C , is introduced. The latent class variable captures variation in growth parameters between these unobserved groups.

One benefit of an SEMM model is that it is estimated by maximum likelihood using an EM algorithm (Kreuter & B. Muthén, 2008), which includes all observations in a data set (Little & Rubin, 2002). This method allows model parameters to be informed by all cases that contribute a portion of the data, which is an appropriate way to accommodate missing data (Schafer & Graham, 2002). Another benefit of LCGM specifically is that an individual's probabilities of being in each class and the predictors' effects on those probabilities are estimated in the same analysis. The analysis compares the probability of membership in all profiles in reference to one of the profiles (e.g., 1 vs. 2, 3, 4).

Other benefits of an LCGM analysis include the fact that LCGM relies on a formal statistical model rather than an ad hoc algorithm based on decision rules (e.g., cluster analysis) and allows for flexibility in the model (Everitt & Hand, 1981). Second, LCGM allows for uncertainty in class membership. Thus, we are able to predict the *probability* of being in a given class. In other words, participants are not artificially forced into a class so that predictors of class membership can be tested in a subsequent analysis. Rather, all analyses are performed in one formal statistical model.

Data in the current study were analyzed using Version 6 of Mplus (L. Muthén & B. Muthén, 2010) and models with one through five classes were estimated. As

two distinct variables measured across time were included, there were five main latent variables estimated (in addition to random effects): one categorical class variable, two intercepts (one for aggression, one for victimization), and two slopes (aggression, victimization). Figure 1 illustrates the basic LCGM model (not including predictors) that was estimated.

CHAPTER III

RESULTS

Descriptive statistics of all study variables are in Table 1. Correlations among all study variables are presented in Table 2. The bivariate correlations were in the expected directions, with friend status and peer acceptance being negatively related to aggression and peer victimization at most time points. There was strong stability in aggression across time points and small to moderate stability in victimization across the time points. Both friend aggression and friend withdrawal were associated with child aggression, particularly at younger ages. Neither friend aggression nor friend withdrawal was associated with child peer victimization at the bivariate level.

Latent Class Growth Model Comparisons

Latent class growth models with one through five classes were fit to determine the optimal number of classes to describe changes in victimization and aggression from kindergarten to fifth grade in the current sample. Initially there was a problem specifying the models as the matrix was not positive definite, meaning that the equations could not be calculated. An examination of the data showed a negative, but non-significant residual variance of fifth grade aggression. Because this variance was not significant (Hipp & Bauer, 2006), it was constrained to be zero in all models. Model fit was assessed using a number of indices. The

Bayesian Information Criterion (BIC) was examined, where the smallest number indicates best fit. The actual value of the BIC is not relevant or indicative of fit and cannot be compared across different samples. Rather, it is the relative value of the BIC for different models fit to the same sample. The Lo-Mendell-Rubin likelihood ratio test (LMR test) was also used, which tests the $-2 \log$ likelihood difference between models with k and $k - 1$ classes (Lo, Mendell, & Rubin, 2001). Entropy, a standardized measure of how accurately participants are classified, was also examined for each model. Entropy of .80 or better indicates a model with accurate classification. Finally, the average posterior probabilities were examined for each class within each model. Classes with average posterior probabilities above .80 reflect a high degree of confidence in class assignment.

Fit statistics for each of the models is presented in Table 3. The five-class model involved a matrix that was not positive definite. An examination of the data indicated that there was not an appropriate constraint that would correct the problem. Thus, the five-class model was determined to be a poor fit for the data. The BIC for the four-class model was the smallest (-12884.928); thus, the four-class model was selected as the best number of longitudinal classes for the current data. The p -value for the LMR test suggests that the four-class model fit the data better than the three-class model ($p = .08$). Furthermore, both the entropy (.84) and average posterior probabilities (.81 - .95) for the four-class model suggest a high degree of confidence in class assignment. Figure 2 displays the victimization and aggression trajectories for each class.

The classes for the four-class model were examined for normality. The probabilities for class membership and most likely membership were saved from the analysis. Histograms, kurtosis, and skewness were examined on measures of victimization and aggression in kindergarten, first, second, and fifth grades within each class. These indicated that the variables within each class were normally distributed. Two additional post-hoc analyses were run with respect to gender. A chi-square analysis indicated that gender predicted most likely membership ($\chi^2 = 207.65, p < .001$; see Table 4 for the cross-tabulation.) Independent samples t-tests were also run to determine whether the probability of being in each class differed for boys and girls. For the normative class (Class 2), girls' probability scores ($M = .87, SD = .27$) were higher than boys' ($M = .63, SD = .42; t = 16.29, p < .001$). For Class 1, 3, and 4, boys' probability scores ($M = .23, SD = .35; M = .04, SD = .13; M = .08, SD = .24$, respectively) were higher than the girls' ($M = .08, SD = .22; M = .03, SD = .10; M = .01, SD = .11$, respectively; $t_s > 3, p_s \leq .001$). It should be noted that although class membership was forced and used to perform these analyses, all other analyses described below (including additional gender analyses) were conducted within the modeling framework and in relation to the probabilities of membership in the classes.

Description of Latent Classes

Table 5 shows the average victimization and aggression intercepts and slopes for each class. Class 1 showed moderate initial levels of aggression with a steep decrease to low levels in fifth grade. Initial victimization levels were low to

moderate and decreased across elementary school. Sixteen percent of the sample had a higher probability of being in this class compared to the other three classes. This class will be referred to as the “Moderate, Decreasing” class.

Class 2 showed low and decreasing levels of both aggression and victimization across elementary school. The largest proportion of the sample was more likely to be in Class 2 compared to the other classes. Seventy-eight percent of children would be classified in Class 2 based on their highest probability scores. As this class represents the “average” profile that describes most children, this class will be referred to as the “Normative” class.

Class 3 showed moderate levels of aggression that were stable across elementary school. Victimization, on the other hand, increased to high levels by fifth grade. The fewest proportion of children (1.4%) had a higher probability of being in Class 3 compared to the other classes. This class will be referred to as “Increasing Victimization, Stable Aggression.”

Finally, Class 4 showed high levels of aggression that, despite a slight decrease, remained elevated throughout elementary school. In comparison, initial victimization was low to moderate and decreased to low levels by fifth grade. Four percent of the sample had the highest probability of being in Class 4 compared to the other three classes. This class will be referred to as “Decreasing Victimization, High Aggression.”

Prediction of Probability of Membership in Classes

Predictors of probabilities in the four identified classes were entered in hierarchical steps (McArdle, 2005). The log likelihoods of each model were compared with the previous model to determine whether the predictors had a significant effect on the model. A chi-square difference test was used to test whether the more complex model evidenced better fit. First, gender (0 = girls, 1 = boys) was entered into the model. The inclusion of gender significantly improved the model fit, $\chi^2(3) = 474.76, p < .05$. Furthermore, gender significantly predicted the probabilities of membership in each class, reflecting the preliminary t-tests (see Tables 6, 7, & 8). Next, kindergarten friend status (0 = friendless, 1 = friended) and kindergarten social preference (grand mean centered) were entered as main effects and significantly improved model fit ($\chi^2 = 464.87, p < .05$) and significantly predicted probabilities of membership in classes (see Tables 9, 10, & 11). Two-way interactions between gender and the two peer status variables were also entered, but did not significantly improve model fit and were not significant predictors of membership probabilities.

The next models were fit on the subset of the sample¹ who had at least one identified reciprocated friendship (67% of the current sample). First, gender, friend aggression (grand mean centered), and friend withdrawal (grand mean centered) were entered as main effects. The main effects of friend aggression and friend

¹ The process of indentifying the number of classes was re-run for the subset and the same general pattern emerged.

withdrawal were not significant. However, the interactions between gender and each of the friend variables were significant and significantly improved the model fit, $\chi^2 = 13.84, p < .05$ (see Tables 12, 13, & 14).

The significant two-way interactions were tested, plotted, and interpreted following Aiken and West (1991). Figures were plotted using high and low values ($\pm 1 SD$) of each friend variable for boys and girls (Figures 3 & 4), showing the log odds of membership in each class. Further, simple slopes analyses were performed to determine at what range the moderator significantly affected the association between the predictor and the outcome.

Normative Class Versus All Other Classes

The first comparison examined the likelihood of being in the normative class compared to all other classes. Being a boy was associated with the probability of membership in the three non-normative classes compared to the normative class (Table 6). This difference was particularly noticeable in the Low Victimization, High Aggression class, where boys' odds of being in that class compared to the normative class were 27.93 times higher than girls' odds of being in that class compared to the normative class.

Being well accepted by one's peers was positively associated with probability of membership in the normative class compared to all three non-normative classes (Table 9). Again, this difference was most noticeable in the Low Victimization, High Aggression class. Children with acceptance scores one standard deviation above the mean ($SD = .966$) had odds of being in the Normative class versus the Low

Victimization, High Aggression class that were 10.73 times higher than children with average acceptance scores.

Friend status (whether a child had a reciprocated friendship) significantly and negatively predicted probability of membership in the Normative class compared to the Low Victimization, High Aggression class (Table 9). Specifically, the odds of a child with a friend being in the Low Victimization, High Aggression class compared to the Normative class is about 1.6 times that of a child without a friend. Friend status did not differentiate the Normative class and the remaining non-normative classes.

Friend aggression, gender, and the interaction between the two significantly predicted probability of membership in the Normative class compared to the Increasing Victimization, Stable Aggression class (Table 12, Figure 3). Specifically, for girls, the level of friend aggression was negatively associated with membership in the Normative class, $z = -2.65, p = .008$. For boys, there was no association between friend aggression and probability of membership in the Normative class, $z = -0.22, p = .83$. Furthermore, at high levels of friend aggression, gender did not predict probability of membership in the Normative class, $z = -0.73, p = .47$; whereas at low levels of friend aggression, gender was associated with probability of membership such that girls had higher odds of being in the Normative compared to the Increasing Victimization, Stable Aggression class, compared to boys, $z = -2.92, p = .004$. Friend aggression did not differentiate the Normative class from any of the other non-normative classes. Friend withdrawal, gender, and the interaction

between the two differentiated the Normative and Decreasing Victimization, High Aggression classes. These findings, however, are reported in detail below.

In summary, girls' odds of being in the Normative class compared to any non-normative class were higher than boys' odds. Gender and acceptance were the two variables that differentiated the Normative class and the Moderate class, with increasing acceptance being associated with greater odds of being the Normative class. Friend characteristics did not differentiate these two classes. Gender, acceptance, friend aggression, and the interaction between friend aggression and gender differentiated the Normative class and the Increasing Victimization, Stable Aggression class. Girls and well-accepted children had higher probabilities of membership in the Normative class. Girls whose friends were low on aggression had higher probabilities of being in the Normative class compared to girls whose friends were high on aggression and compared to boys. Finally, acceptance and friend status differentiated the Normative class and the Low Victimization, High Aggression class, such that well-accepted children had higher probabilities of being in the Normative class compared to low accepted children. In contrast, children with friends had higher probabilities of being in the Low Victimization, High Aggression class compared to friendless children. Again, the interaction between gender and friend withdrawal is described below.

Increasing Victimization, Stable Aggression Class Versus All Other Classes

The second comparison involved the Increasing Victimization, Stable Aggression class. (Comparisons with the Normative class are described above and

not duplicated in this section.) Gender did not differentiate the Moderate class and the Increasing Victimization class. However, compared to the Low Victimization, High Aggression class, girls' odds of being in the Increasing Victimization, Stable Aggression class were higher than those of boys (Table 7).

Acceptance did not differentiate the Moderate class and the Increasing Victimization class. Compared to the Low Victimization, High Aggression class, however, well-accepted children's odds of being in the Increasing Victimization class were higher than those of poorly accepted children (Table 10). Specifically, the odds of children who were a standard deviation above the mean on acceptance ($SD = .966$) being in the Increasing Victimization class compared to the Low Victimization, High Aggression class were 2.30 times higher than children who were average on acceptance.

Friend status differentiated the Moderate class and the Increasing Victimization class ($p < .10$), such that children with friends had higher odds than did children without friends of being in the Moderate class compared to the Increasing Victimization class. Similarly, compared to the Low Victimization, High Aggression class, children without friends had higher odds of being in the Increasing Victimization class compared to children with friends (Table 10).

Friend characteristics did not differentiate the Increasing Victimization class and the Moderate class, either as main effects or interactions (Table 13). As described above, gender, friend aggression, and the interaction differentiated the Increasing Victimization class and the Normative class. As described below, gender,

friend withdrawal, and the interaction differentiated the Increasing Victimization class and the Decreasing Victimization, High Aggression class.

Decreasing Victimization, High Aggression Class Versus All Other Classes

The final comparison was with the Decreasing Victimization, High Aggression class. Main effects comparisons with the Normative and Increasing Victimization classes are described above. Gender was significantly associated with the probability of being in the Decreasing Victimization, High Aggression class versus the Moderate class (Table 8). Boys' odds of being in the Decreasing Victimization, High Aggression class versus the Moderate class were 5.26 times higher than girls' odds.

Friend status did not differentiate the Decreasing Victimization, High Aggression and Moderate classes. However, acceptance did differentiate these two classes. Specifically, children who are one standard deviation above the mean ($SD = .966$) had odds of being in the Moderate class versus the Decreasing Victimization, High Aggression class that were 3.05 times higher than children with average acceptance (Table 11).

Friend aggression did not differentiate the Decreasing Victimization, High Aggression class and any other class, either as a main effect or as an interaction. However, friend withdrawal, gender, and the interaction between the two significantly predicted probability of membership in the Decreasing Victimization, High Aggression class compared to the Normative class (Table 14, Figure 4a). Specifically, for girls, the level of friend withdrawal was negatively associated with

membership in the Decreasing Victimization, High Aggression class, $z = -3.73$, $p < .001$. For boys, there was no association between friend withdrawal and probability of membership in the Decreasing Victimization, High Aggression class, $z = -0.45$, $p = .66$. At low levels of friend withdrawal, gender predicted probability of membership in the Decreasing Victimization, High Aggression class, $\beta = 2.30$, $z = 3.32$, $p < .001$. That is, boys' odds of being in the Decreasing Victimization, High Aggression class versus the Normative class were 9.97 times higher than girls' odds. However, at high levels of friend withdrawal, this effect was stronger: $\beta = 8.29$, $z = 4.13$, $p < .001$.

A similar pattern was seen when comparing the Decreasing Victimization, High Aggression class to the other two non-normative classes. That is for girls, friend withdrawal was negatively associated with membership in the Decreasing Victimization, High Aggression class compared to both the Moderate class ($z = -3.49$, $p < .001$, Figure 4b) and the Increasing Victimization class ($z = -2.73$, $p = .006$, Figure 4c). For boys, there was no association between friend withdrawal and probability of membership in the Decreasing Victimization, High Aggression class versus the Moderate class ($z = -1.01$, $p = .31$) or the Increasing Victimization class ($z = -0.96$, $p = .34$). There were no gender differences at low levels of friend withdrawal (Moderate: $z = 1.26$, $p = .21$; Increasing Victimization: $z = 1.27$, $p = .21$). At high levels of friend withdrawal, boys had higher odds than girls did of being in the Decreasing Victimization, High Aggression class compared to the Moderate class ($z = 3.20$, $p = .001$) or the Increasing Victimization class ($z = 2.91$, $p = .004$).

CHAPTER IV

DISCUSSION

The current study investigated longitudinal patterns of peer victimization across elementary school. The behavioral theory of peer victimization was used to conceptualize the development of victimization across this period. The results supported several of its predictions. First, for most children, peer victimization declined across elementary school. Second, one group was characterized by high aggression coupled with decreasing peer victimization. Third, friendship variables were related to longitudinal classes of peer victimization, although the patterns of association were complex and contrary to some expectations. For example, having a friend increased the odds that a child would display high aggression and experience decreasing victimization compared to experiencing normative or high levels of victimization. In terms of friend characteristics (withdrawal and aggression), the association with patterns of victimization was stronger for girls than for boys. In general, the behavioral theory of peer victimization seems to be a viable theory that may help researchers, educators, and practitioners to understand the development of peer victimization and to identify young children who are at greater risk for becoming chronic victims *before* these problems become entrenched.

Normative Pathway

As expected, the normative class (the class into which most children were classified) was characterized by low initial and declining levels of both aggression and peer victimization. The behavioral theory of peer victimization proposes that peer victimization should decline because most children respond to victimization in ways that discourage future victimization (Visconti & Troop-Gordon, 2010), such as by ignoring or being assertive (Champion, Vernberg, & Shipman, 2003; Garner & Lemerise, 2007). Furthermore, peer victimization was predicted to decline because aggression declines during this period as well (Kokko et al., 2006). That is, there are fewer aggressors over time, and thus we would expect less victimization as well. However, this is the first study to demonstrate that aggression and victimization are declining simultaneously during this period.

Most previous research has focused solely on the correlates and outcomes of high levels of victimization (e.g., variable-centered approaches such as Beran & Violato, 2004) or has focused on children who are the victims of frequent or chronic peer aggression (e.g., person-centered approaches such as Browning et al., 2003). Although understanding peer victimization at its extremes is important, to appreciate and understand peer victimization fully, we must understand it across the spectrum. Without understanding the normative process or experience of peer victimization, we cannot understand how and where some children deviate from this path (e.g., Cicchetti, 2006). The current study takes a first step by modeling both normative (i.e., “average”) pathways *and* non-normative pathways.

The normative pathway in the current study suggests, as predicted by the behavioral theory, that many children experience peer victimization, particularly when they are younger. Adults and teachers often view teasing as a normal part of growing up and dismiss or de-emphasize the negative consequences of peer victimization. The results of the current study suggest that *some* peer victimization *is* a common experience of childhood. Acknowledging this fact may be an important first step in convincing skeptical adults that for some children, this common and unpleasant childhood experience can develop into an ongoing painful and detrimental cycle.

An important next step will be to investigate normative patterns of peer victimization across childhood and adolescence. Although the current results suggest higher levels of peer victimization at younger ages, it is also possible that higher levels of peer victimization are common after a school transition, regardless of age. For example, there is evidence that there is a rise in peer victimization during middle school (e.g., Demaray & Malecki, 2003), which follows the transition from elementary school. A longitudinal study that follows children from kindergarten through high school could help address this question. Another possibility would be to assess individual children before and after they transfer classrooms or schools. The behavioral theory would suggest that children would experience higher levels of peer victimization upon entry to a new classroom – aggressors do not know whether these new children are “easy targets” yet. The new children’s responses to victimization would then predict their future victimization.

This type of design might address the question of age-related versus transitional changes in peer victimization without requiring years of longitudinal work.

Aggression and Peer Victimization

The role of aggression in the development of peer victimization is an area that is not well understood. The current study provides support for two predictions regarding aggression. The first prediction of the behavioral theory is that ineffective or reactive aggression will actually exacerbate victimization. Children who respond to victimization with aggression that is ineffective—that is, aggression that poses no threat to the original aggressor—may encourage future aggression by amusing peers or confirming their dominant status. Although the current study did not examine children's responses to peer victimization, the Increasing Victimization, Stable Aggression class identified in the current study may represent this group of children. Previous work has suggested a link between reactive aggression and victimization (Lamarche et al., 2006; Pellegrini et al., 1999). However, the limited existing work has been variable-centered and cross-sectional. This study is one of the first to model associations over time. The current study is also a person-centered approach, which allows us to examine how developmental trajectories differ across groups (Laursen & Hoff, 2006). A person-centered approach also provides prevalence estimates. It should be acknowledged that the current sample is not a broad epidemiological sample, but it is large and drawn from a range of schools representative of the area. Just over 1% of the sample was classified in the Increasing Victimization, Stable Aggression group, suggesting that the combination

of aggression and increasing victimization is rare. Our understanding of the development of victimization will require a more in-depth study of these children; however, researchers will need to pursue investigations that oversample these children in order to have the power to detect processes that may be unique to this group.

Another group identified by the current study was the Decreasing Victimization, High Aggression class. This group of children had elevated levels of victimization in kindergarten that decreased to normative levels by 5th grade. However, these children also displayed very high levels of aggression across elementary school. Although a small percentage of children fit this class (~4%), it is a far more common pattern than the Increasing Victimization, Stable Aggression class. Furthermore, the behavioral theory of peer victimization would predict the existence of this class – had this class not been identified, it would have called into serious question the validity of the behavioral theory of peer victimization. Any response or circumstance that serves as a negative consequence to the aggressor should result in lower victimization over time. We would expect that some children's aggressive responses would be threatening enough to discourage future victimization. However, despite the fact that this pattern seems more common and is predicted by theory, the existence of this group of children is virtually absent from the literature.

The general consensus in the literature is that aggressive responses to victimization are ineffective (Kochenderfer & Ladd, 1997; Salmivalli et al., 1996).

However, this stance is inconsistent with the behavioral theory on which many of these investigations are based. Although the current study examines covarying patterns of aggression and victimization and does not examine specific responses to victimization, the Decreasing Victimization, High Aggression class is suggestive of such a possibility. Furthermore, existing studies do indicate that aggression can be a protective factor when it comes to peer victimization (Salmivalli & Helteenvouri, 2007). Unfortunately, these findings are buried in more general reports and there are no studies that explicitly examine the possibility that aggression may be an *effective* response to peer victimization (i.e., a response that decreases the future likelihood of victimization).

The development of successful intervention programs will depend on our ability to understand the process of peer victimization thoroughly. It is not clear why researchers have not explicitly considered the potential positive effects of aggression for peer victimization. One reason may be a fear of promoting aggression as an acceptable response to peer victimization. However, investigating whether aggression is an *effective* response and *advocating* for aggression as a response are two very different approaches. If future research indicates that for some children, some forms of aggressive responses are effective, then it will be important to incorporate this information into intervention programs. Years of prevention science research in the areas of drug abuse and sex education have shown that children and adolescents tend to discredit messages that include exaggerated negative effects, biased information, or false information (e.g., Beck,

1998; Golub & Johnson, 2001). Therefore, research must more firmly establish the role of aggression—both positive and negative aspects—in the development of peer victimization, and then incorporate those findings into intervention programs.

The majority of both boys and girls would be classified into the normative class based on their highest probability score. When comparing the odds of being in various classes, boys (compared to girls) had higher odds of being in the non-normative classes versus the normative class. These results suggest that, overall, girls are more likely than boys to follow pathways characterized by low aggression and low victimization.

One particularly intriguing finding was the fact that compared to girls, boys had higher odds of being in the Decreasing Victimization, High Aggression class compared to the Increasing Victimization, Stable Aggression class. What is important to remember is that compared to boys, girls have a much higher chance of being in the normative class compared to *either* of these non-normative pathways. The result shows that when examining *non-normative* pathways, girls are more likely to follow pathways characterized by increasing victimization and elevated aggression compared to pathways characterized by high levels of aggression and decreasing levels of victimization. That is, *when* girls display non-normative levels of aggression (which is a less common situation for girls than for boys), girls are more likely to find themselves experiencing increasing levels of victimization, compared to boys who are more likely to find themselves experiencing decreasing levels of victimization.

Why would we see these differential patterns for aggressive boys versus aggressive girls? In early childhood, boys and girls are approximately the same physical size, so it is unlikely to be the case that aggressive boys are simply more physically intimidating than girls at this age. However, it is possible that girls and boys are socialized to physically “fight back” in different ways. Boys may be more likely to throw punches or kick, whereas girls may be more likely to throw items or shove, and boys’ physical responses may act as more of a deterrent than girls’ physical responses. Although there are numerous studies devoted to examining gender differences in physical, indirect, and social aggression, researchers do not investigate gender differences in types of physical aggression.

Another possibility is that aggressive responses are viewed as more gender appropriate for boys compared to girls. Thus, compared to girls, boys who respond aggressively may be viewed with more respect by the peer group. Girls, on the other hand, may be viewed as violating gender norms and may be viewed with more disdain by both the aggressor and the larger peer group. As discussed below, withdrawal of peer group support may increase the likelihood of increasing peer victimization.

Clearly, further work is necessary to fully explain these results. However, these gender patterns suggest that when girls are identified as being at risk for peer problems, factors that contribute to escalating victimization should be the focus of intervention. Although boys also follow this pathway, it may be important to target high levels of aggression for intervention. Although the high levels of aggression

may discourage further peer victimization, there are still likely negative consequences for these behaviors.

Peer Relationships and Peer Victimization

Peer Acceptance. As expected, peer acceptance and friend status (whether a child has a mutual friendship) were unique predictors of longitudinal peer victimization classes. Furthermore, peer acceptance was positively related to the odds of being in the normative class versus any of the three non-normative classes. This finding supports the idea that high peer acceptance discourages peer victimization, perhaps through general disapproval or through the availability of defenders.

Although peer acceptance clearly differentiates normative classes from non-normative classes, there is evidence that suggests that peer acceptance may be a relatively weak factor in discouraging or encouraging victimization of a particular child. For example, children with higher peer acceptance have higher odds (compared to low-accepted children) of being in the Increasing Victimization, Stable Aggression class versus the Decreasing Victimization, High Aggression class. Thus, when comparing these two non-normative classes, peer acceptance shows a *positive* association with peer victimization over time. (This association is seen *only* when comparing non-normative classes – again, peer acceptance is strongly related to higher odds of being in the normative class versus any non-normative class.) It is

possible that high levels of aggression² discourage victimization regardless of the context of broader peer acceptance, that aggression can discourage both victimization and acceptance, or a combination of the two. Another possibility, discussed in further detail below, is that the role of friendship is an important consideration when aggression and victimization co-occur.

Friend Status. Although friend status was expected to predict membership in longitudinal peer victimization classes, the associations were in unexpected directions. Children with friends did not have higher odds (compared to friendless children) of being in the normative class versus any of the non-normative classes. Two of the comparisons showed no significant differences, and one (between the Normative class and the Decreasing Victimization, High Aggression class) showed the opposite result: children with friends had higher odds (compared to friendless children) of being in the Decreasing Victimization, High Aggression class versus the Normative class. The same result was found when comparing the Decreasing Victimization, High Aggression class to the Increasing Victimization, Stable Aggression class.

There are a couple of conclusions that can be drawn from these results. The Decreasing Victimization, High Aggression class is not characterized by children for whom friendship is a struggle. This result is not especially surprising. Highly aggressive children may have struggles in the larger peer group, but several studies

² The levels of aggression seen in the Decreasing Victimization, High Aggression class are much higher than the levels of aggression seen in the Increasing Victimization, Stable Aggression class.

have shown that aggressive children are able to form friendships – often with other highly aggressive children (Bowker, Rubin, Rose-Krasnor, & Booth-LaForce, 2007; Ellis & Zaratany, 2007). Thus, although lower peer acceptance is associated with membership in the Decreasing Victimization, High Aggression group versus the normative group, these children may have at least two factors that may protect them from peer victimization. First, they have friends, and these friends may serve as defenders, even if children in the larger peer group do not. Second, these children display high levels of aggression on their own, which may discourage peer victimization.

Conversely, when comparing the Increasing Victimization, Stable Aggression class to the Decreasing Victimization, High Aggression class, we see that peer acceptance is associated with higher odds of being in the Increasing Victimization class, but that friendlessness is also associated with higher odds in the Increasing Victimization class. Although children in the Increasing Victimization class may be less disliked than children in the Decreasing Victimization class, they are less likely to have friends to protect them. Thus, they have relatively low peer acceptance (compared to the Normative class), higher rates of friendlessness, and moderate rates of aggression (perhaps ineffective aggression). This lack of protective factors may contribute to their increasing levels of victimization across elementary school.

In general, friend status seems to be a weaker predictor of class membership when compared to overall peer acceptance. It is, however, still a unique predictor in certain cases. The interplay between friend status, victimization, and aggression

will be an important area of future research. Of course, friend status is only one component of friendship. For children who have friends, the characteristics of those friends may also be important in the development of peer victimization.

Friend Characteristics. Consistent with expectations, the association between friend characteristics and class membership was dependent on gender. Interactions between gender and the two friend characteristic variables (friend aggression and friend withdrawal) were significant for several class comparisons. However, examination of these interactions showed that the associations between friend characteristics and class membership were not significant for boys. The association between friendship and adjustment tends to be stronger for girls (Rudolph, Ladd, & Dinella, 2007), and girls tend to expect more from their friendships than do boys. Although the association between friend characteristics and class membership were not significant for boys, the current results do not suggest that friendship is irrelevant for the development of peer victimization among boys. The association between friend status and class membership did not interact with gender, suggesting that the associations were similar for boys and girls. Future research may consider other types of friend characteristics that might influence the process for boys. Furthermore, the inclusion of friendship quality would be an important factor when considering the overlap among gender, friendship, and peer victimization.

Two hypotheses were proposed about the association between friend aggression and class membership. The first was that friend aggression might be

associated with membership in classes characterized by declining peer victimization, because aggressive children might be better able to intervene on behalf of their friends. This hypothesis was not supported. Friendship characteristics are more important for girls than for boys, and as discussed previously, when girls are aggressive, they are more likely to be in classes characterized by increasing rather than decreasing peer victimization, suggesting that aggression is less likely to be an effective response to peer victimization for girls compared to boys. This may be true whether the aggressive response is conducted by the child herself or by her friend (who will most often be a girl, as same-gender friendships predominate during this age period; Laursen & Bukowski, 1997).

The second hypothesis was that friend aggression would predict membership in classes characterized by high levels of aggression, due to homophily processes. This second hypothesis was partially supported. For girls, higher friend aggression was associated with higher odds of being in the Increasing Victimization, Stable Aggression class versus the Normative class. However, friend aggression did not differentiate the other high aggression class (Decreasing Victimization, High Aggression) from either the normative or the non-normative classes. It may be that, for girls, homophily is not strong for all types of aggression, but for specific types of aggression that are associated with increasing levels of victimization. Alternatively, it is possible that friend pairs of aggressive girls are less common than friend pairs of aggressive boys. Due to the violation of gender norms, pairs of aggressive girls

may be targeted for victimization, particularly if they display ineffective types of aggression. A third possibility is that girls with aggressive friends are increasingly being victimized by those friends. Victimization does occur in the context of friendship, and aggressive girls may have more unstable or low-quality friendships that lead to victimization. Future work should address these possibilities.

Having friends high in withdrawal was expected to predict membership in classes with increasing victimization, based on the idea that withdrawn friends would be unable to intervene on children's behalves. Friend withdrawal did differentiate the Increasing Victimization, Stable Aggression and Decreasing Victimization, High Aggression classes, such that higher friend withdrawal was associated with higher odds of being in the Increasing Victimization class. However, higher friend withdrawal was also associated with higher odds of being in the Normative and Moderate classes compared to the Decreasing Victimization class. As all of these classes displayed decreasing levels of victimization, the hypothesis was not entirely supported. Perhaps friend withdrawal is more closely associated with trajectories of aggression, as opposed to trajectories of victimization (at least for girls) as friend withdrawal differentiated the class with the highest levels of aggression from all the others. For girls, high friend withdrawal may be a protective factor against exceptionally high levels of aggression (although not against moderate levels of aggression that co-occur with victimization). High friend withdrawal does not appear to be a risk factor for peer victimization, suggesting

that the overall withdrawal or shyness of a friend may not prevent her from intervening on a child's behalf.

Limitations

Although the current study significantly contributes to our understanding of the development of peer victimization, there are several limitations to acknowledge. Peer reports are a valid and reliable source of information, particularly regarding aggression and victimization and are comparable to observations and teacher reports (Putallaz et al., 2007). However, it is widely established that multiple reporters are preferable and provide a more complete picture of most phenomena. Thus, future research should include self- and teacher-reports at a minimum. Furthermore, although peer reports of withdrawn behavior are acceptable in kindergarten, those reports are less stable than teacher reports.

A second weakness is the general nature of the peer nomination measures. Theory (Smith et al., 2001) and previous literature (Garner & Lemerise, 2007; Salmivalli & Helteenvouri, 2007) suggest that the two classes characterized by elevated aggression (Increasing Aggression, Stable Aggression and Decreasing Victimization, High Aggression) may have been detecting two different types of aggression – one that was effective in discouraging victimization and one that actually encouraged victimization. Unfortunately, only general aggression was measured – there was no differentiation between types. Future research should test the hypotheses suggested by the current data by explicitly measuring multiple types of aggression.

Similarly, the current study measured general withdrawal and shyness. A more nuanced measurement of this construct might explain some of the results found in the current study. In particular, the meaning of low withdrawal is not clear. Low withdrawal was associated with membership in the Decreasing Victimization, High Aggression class. However, what do these children look like? They may be highly assertive or highly active. Future research will need to determine the behavioral profile of a child low on this construct.

Finally, although the identified classes support the behavioral theory of peer victimization, the patterns are only suggestive. The current study does not measure specific responses to victimization. Future longitudinal research should examine actual responses to peer victimization. No current research examines responses to peer victimization in a longitudinal context. Furthermore, current research does not investigate the responses of children's friends. Although the association between friendship and class membership was not entirely as expected, the results still suggested that friendship is an important component in the development of peer victimization.

Conclusions

The current study contributes to our understanding of peer victimization. It is the first to model longitudinal trajectories of peer victimization across elementary school, bridging early elementary school to late elementary school. This study builds on previous work by including four time points. Much of the previous work investigating peer victimization is either cross-sectional or involves only two time

points. Another strength of the current study is that it uses a flexible, probabilistic approach (LCGM) to modeling, rather than using extreme cut-off scores or decision rules. This approach allows us to model not only non-normative pathways, but also normative pathways. Furthermore, it reduces classification errors that arise from other approaches. Finally, the current study builds on previous work by modeling aggression over time with peer victimization. A major gap in previous work was the unclear association between aggression and peer victimization, particularly over time.

The current study suggests that most children experience some victimization across elementary school, but that these levels are low and decline across elementary school. Three non-normative pathways were suggested. One followed the same trend of decreasing victimization and aggression, but the initial levels were higher for these children. Two classes displayed elevated aggression. One of these showed moderate levels of aggression and increasing levels of peer victimization. Based on theory and previous work, these children may be displaying ineffective and reactive forms of aggression. The second aggressive class showed elevated initial levels of victimization that declined to normative levels across elementary school, in combination with very high levels of aggression. This particular class was predicted by the behavioral theory of peer victimization, but has not been examined previously. The confirmation of this longitudinal pattern will be important for future work and will contribute to our theoretical understanding of peer victimization as well as to intervention efforts.

Finally, the current study demonstrates that we can predict membership in these longitudinal classes, which may aid in early intervention. Boys seem to be at greater risk for following non-normative aggression and victimization classes. Friendship is related to membership in longitudinal classes, although further research will be needed to better understand these associations. Future work should determine whether these classes can be replicated, establish the prevalence rates for longitudinal pathways, and examine behaviors at a micro-level. What are the specific response behaviors—displayed by both the child and his or her friends—that are associated with membership in each of the longitudinal classes? The answers to these questions will significantly improve our understanding of the development of peer victimization and our ability to help children who are suffering at the hands of their peers.

REFERENCES

- Aiken, L., & West, S. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage Publications, Inc.
- Avgitidou, S. (2001). Peer culture and friendship relationships as contexts for the development of young children's pro-social behaviour. *International Journal of Early Years Education*, 9(2), 145-152. doi: 10.1080/09669760120053510
- Barker, E., Boiven, M., Brendgen, M., Fontaine, N., Arseneault, L., Vitaro, F., Bissonnette, C., & Tremblay, R. (2008). Predictive validity and early predictors of peer-victimization trajectories in preschool. *Archives of General Psychiatry*, 65(10), 1185-1192. doi: 10.1001/archpsyc.65.10.1185
- Bauer, D., & Curran, P. (2004). The integration of continuous and discrete latent variable models: Potential problems and promising opportunities. *Psychological Methods*, 9(1), 3-29. doi: 10.1037/1082-989X.9.1.3
- Beck, J. (1998). 100 years of 'just say no' versus 'just say know': Reevaluating drug education goals for the coming century. *Evaluation Review*, 22(1), 15-45. doi: 10.1177/0193841X9802200102
- Benenson, J., & Christakos, A. (2003). The greater fragility of females' versus males' closest same-sex friendships. *Child Development*, 74(4), 1123-1129. doi: 10.1111/1467-8624.00596

- Beran, T., & Violato, C. (2004). A model of childhood perceived peer harassment: Analyses of the Canadian National Longitudinal Survey of Children and Youth data. *Journal of Psychology: Interdisciplinary and Applied*, 138(2), 129-147. doi: 10.3200/JRLP.138.2.129-148
- Besag, V. (2006). Bullying among girls: Friends or foes? *School Psychology Journal International*, 27(5), 535-551. doi: 10.1177/0143034306073401
- Boulton, M., & Chau, C. (2005). Does friendship moderate the harmful effects of peer victimization and if so how? , Unpublished, cited in Fox & Boulton, 2006.
- Boulton, M., & Smith, P. (1994). Bully/victim problems in middle-school children: Stability, self-perceived competence, peer perceptions and peer acceptance. *British Journal of Developmental Psychology*, 12(3), 315-329.
- Bowker, J., Rubin, K., Rose-Krasnor, L., & Booth-LaForce, C. (2007). Good friendships, bad friends: Friendship factors as moderators of the relation between aggression and social information processing. *European Journal of Developmental Psychology*, 4(4), 1-20. doi: 10.1080/17405620701632069
- Browning, C., Cohen, R., & Warman, D. M. (2003). Peer social competence and the stability of victimization. *Child Study Journal*, 33(2), 73-90.
- Camodeca, M., Goossens, F. A., Meerum Terwogt, M., & Schuengel, C. (2002). Bullying and victimization among school-age children: Stability and links to proactive and reactive aggression. *Social Development*, 11(3), 332-345. doi: 10.1111/1467-9507.00203

- Casper, D., & Card, N. (2010). "We were best friends, but . . .": Two studies of antipathetic relationships emerging from broken friendships. *Journal of Adolescent Research*, 25(4), 499-526. doi: 10.1177/0743558410366596
- Champion, K., Vernberg, E., & Shipman, K. (2003). Nonbullying victims of bullies: Aggression, social skills, and friendship characteristics. *Journal of Applied Developmental Psychology*, 24(5), 535-551. doi: 10.1016/j.appdev.2003.08.003
- Cicchetti, D. (2006). Development and psychopathology. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology: Theory and method* (Vol. 1, 2nd ed., pp. 1-23). Hoboken, NJ: John Wiley & Sons, Inc.
- Coie, J., Dodge, K., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology*, 18(4), 557-570. doi: 10.1037/0012-1649.18.4.557
- Coie, J., Dodge, K., & Kupersmidt, J. (1990). Peer group behavior and social status. In S. Asher & J. Coie (Eds.), *Peer rejection in childhood* (pp. 17-59). New York, NY: Cambridge University Press.
- Crick, N., Casas, J., & Nelson, D. (2002). Toward a more comprehensive understanding of peer maltreatment: Studies of relational victimization. *Current Directions in Psychological Science*, 11(3), 98-101. doi: 10.1111/1467-8721.00177

- Crick, N., & Nelson, D. (2002). Relational and physical victimization within friendships: Nobody told me there'd be friends like these. *Journal of Abnormal Child Psychology*, 30(6), 599-607. doi: 10.1023/A:1020811714064
- Daniels, T., Quigley, D., Menard, L., & Spence, L. (2010). "My best friend always did and still does betray me constantly": Examining relational and physical victimization within a dyadic friendship context. *Canadian Journal of School Psychology*, 25(1), 70-83.
- Davidson, L., & Demaray, M. (2007). Social support as a moderator between victimization and internalizing-externalizing distress from bullying. *School Psychology Review*, 36(3), 383-405.
- Demaray, M., & Malecki, C. (2003). Perceptions of the frequency and importance of social support by students classified as victims, bullies, and bully/victims in an urban middle school. *School Psychology Review*, 32(3), 471-489.
- Dempsey, J., Fireman, G., & Wang, E. (2006). Transitioning out of peer victimization in school children: Gender and behavioral characteristics. *Journal of Psychopathology and Behavioral Assessment*, 28(4), 273-282. doi: 10.1007/s10862-005-9014-5
- Elias, M., & Zins, J. (2003). Bullying, other forms of peer harassment, and victimization in schools: Issues for school psychology research and practice. *Journal of Applied School Psychology*, 19(2), 1-5.

- Elledge, L., Cavell, T., Ogle, N., Malcolm, K., Newgent, R., & Faith, M. (2010). History of peer victimization and children's responses to school bullying. *School Psychology Quarterly, 25*(2), 129-141.
- Ellis, W., & Zarbatany, L. (2007). Explaining friendship formation and friendship stability: The role of children's and friends' aggression and victimization. *Merrill-Palmer Quarterly, 53*(1), 79-104. doi: 10.1353/mpq.2007.0001
- Estell, D. (2007). Aggression, social status, and affiliation in kindergarten children: A preliminary study. *Education and Treatment of Children, 30*(2), 53-72.
- Everitt, B., & Hand, D. (1981). *Finite mixture distributions*. London: Chapman and Hall.
- Finnegan, R., Hodges, E., & Perry, D. (1998). Victimization by peers: Associations with children's reports of mother-child interaction. *Journal of Personality and Social Psychology, 75*(4), 1076-1086. doi: 10.1037/0022-3514.75.4.1076
- Garner, P., & Lemerise, E. (2007). The roles of behavioral adjustment and conceptions of peers and emotions in preschool children's peer victimization. *Development and Psychopathology, 19*(1), 57-71. doi: 10.1017/S0954579407070046
- Georgiou, S. (2008). Bullying and victimization at school: The role of mothers. *British Journal of Educational Psychology, 78*, 109-125. doi: 10.1348/000709907X204363

- Gini, G. (2008). Italian elementary and middle school students' blaming the victim of bullying and perception of school moral atmosphere. *The Elementary School Journal*, 108(4), 335-354. doi: 10.1086/528975
- Glover, D., Gough, G., Johnson, M., & Cartwright, N. (2000). Bullying in 25 secondary schools: Incidence, impact and intervention. *Educational Research*, 42(2), 141-156. doi: 10.1080/001318800363782
- Goldbaum, S., Craig, W., Pepler, D., & Connolly, J. (2003). Developmental trajectories of victimization: Identifying risk and protective factors. *Journal of Applied School Psychology*, 19(2), 139-156. doi: 10.1300/J008v19n02_09
- Golub, A., & Johnson, B. (2001). Variation in youthful risks of progression from alcohol and tobacco to marijuana and to hard drugs across generations. *American Journal of Public Health*, 91(2), 225-232. doi: 10.2105/AJPH.91.2.225
- Goodman, M., Stormshak, E., & Dishion, T. (2001). The significance of peer victimization at two points in development. *Journal of Applied Developmental Psychology*, 22(5), 507-526. doi: 10.1016/S0193-3973(01)00091-0
- Hanish, L., & Guerra, N. (2002). A longitudinal analysis of patterns of adjustment following peer victimization. *Development and Psychopathology*, 14(1), 69-89. doi: 10.1017/S0954579402001049
- Hazelden Foundation (n.d.) State and federal bullying information. Retrieved from http://www.olweus.org/public/bullying_laws.page on January 30, 2011.

- Hipp, J., & Bauer, D. (2006). Local solutions in the estimation of growth mixture models. *Psychological Methods*, 11(1), 36-53. doi: 10.1037/1082-989X.11.1.36
- Hodges, E., & Perry, D. (1999). Personal and interpersonal antecedents and consequences of victimization by peers. *Journal of Personality and Social Psychology*, 76(4), 677-685. doi: 10.1037/0022-3514.76.4.677
- Hoover, J., Oliver, R., & Hazler, R. (1992). Bullying: Perceptions of adolescent victims in the midwestern USA. *School Psychology International*, 13(1), 5-16. doi: 10.1177/0143034392131001
- Hunter, S., & Boyle, J. (2004). Appraisal and coping strategy use in victims of school bullying. *British Journal of Educational Psychology*, 74, 83-107. doi: 10.1348/000709904322848833
- Hymel, S. (1986). Interpretations of peer behavior: Affective bias in childhood and adolescence. *Child Development*, 57(2), 431-445. doi: 10.2307/1130599
- Jiang, X., & Cillessen, A. (2005). Stability of continuous measures of sociometric status: A meta-analysis. *Developmental Review*, 25(1), 1-25. doi: 10.1016/j.dr.2004.08.008
- Kärnä, A., Voeten, M., Poskiparta, E., & Salmivalli, C. (2010). Vulnerable children in varying classroom contexts: Bystanders' behaviors moderate the effects of risk factors on victimization. *Merrill-Palmer Quarterly*, 56(3), 261-282.

- Kochenderfer, B., & Ladd, G. (1996). Peer victimization: Manifestations and relations to school adjustment in kindergarten. *Journal of School Psychology, 34*(3), 267-283. doi: 10.1016/0022-4405(96)00015-5
- Kochenderfer, B., & Ladd, G. (1997). Victimized children's responses to peers' aggression: Behaviors associated with reduced versus continued victimization. *Development and Psychopathology, 9*(1), 59-73. doi: 10.1017/S0954579497001065
- Kochenderfer-Ladd, B. (2003). Identification of aggressive and asocial victims and the stability of their peer victimization. *Merrill-Palmer Quarterly, 49*(4), 401-425. doi: 10.1353/mpq.2003.0022
- Kochenderfer-Ladd, B. (2004). Peer victimization: The role of emotions in adaptive and maladaptive coping. *Social Development, 13*(3), 329-349. doi: 10.1111/j.1467-9507.2004.00271.x
- Kochenderfer-Ladd, B., & Ladd, G. (2001). Variations in peer victimization: Relations to children's maladjustment. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and victimized* (pp. 25-48). New York, NY: Guilford Press.
- Kochenderfer-Ladd, B., & Skinner, K. (2002). Children's coping strategies: Moderators of the effects of peer victimization? *Developmental Psychology, 38*(2), 267-278. doi: 10.1037/0012-1649.38.2.267
- Kochenderfer-Ladd, B., & Wardrop, J. (2001). Chronicity and instability of children's peer victimization experiences as predictors of loneliness and social

- satisfaction trajectories. *Child Development*, 72(1), 134-151. doi: 10.1111/1467-8624.00270
- Kokko, K., Tremblay, R., Lacourse, E., Nagin, D., & Vitaro, F. (2006). Trajectories of prosocial behavior and physical aggression in middle childhood: Links to adolescent school dropout and physical violence. *Journal of Research on Adolescence*, 16(3), 403-428. doi: 10.1111/j.1532-7795.2006.00500.x
- Kreuter, F., & Muthén, B. (2008). Analyzing criminal trajectory profiles: Bridging multilevel and group-based approaches using growth mixture modeling. *Journal of Quantitative Criminology*, 24(1), 1-31. doi: 10.1007/s10940-007-9036-0
- Ladd, G. (2005). *Children's peer relations and social competence: A century of progress*. London: Yale University Press.
- Ladd, G., Kochenderfer, B., & Coleman, C. C. (1997). Classroom peer acceptance, friendship, and victimization: Distinct relational systems that contribute uniquely to children's school adjustment? *Child Development*, 68(6), 1181-1197.
- Ladd, G., & Ladd, B. (1998). Parenting behaviors and parent-child relationships: Correlates of peer victimization in kindergarten? *Developmental Psychology*, 34(6), 1450-1458. doi: 10.1037/0012-1649.34.6.1450
- Lamarche, V., Brendgen, M., Boivin, M., Vitaro, F., Dionne, G., & Perusse, D. (2007). Do friends' characteristics moderate the prospective links between peer

- victimization and reactive and proactive aggression? *Journal of Abnormal Child Psychology*, 35(4), 665-680. doi: 10.1007/s10802-007-9122-7
- Lanza, S., Flaherty, B., & Collins, L. (2003). Latent class and latent transition analysis. In J. Schinka & W. Velicer (Eds.), *Handbook of psychology: Research methods in psychology* (Vol. 2, pp. 663-685).
- Laursen, B., & Bukowski, W. (1997). A developmental guide to the organisation of close relationships. *International Journal of Behavioral Development*, 21(4), 747-770. doi: 10.1080/016502597384596
- Laursen, B., & Hoff, E. (2006). Person-centered and variable-centered approaches to longitudinal data. *Merrill-Palmer Quarterly*, 52(3), 377-389.
- Linsey, E. (2002). Preschool children's friendships and peer acceptance: Links to social competence. *Child Study Journal*, 32(3), 145-156.
- Little, R., & Rubin, D. (2002). *Statistical analysis with missing data*. New York, NY: John Wiley & Sons.
- Lo, Y., Mendell, N., & Rubin, D. (2001). Testing the number of components in a normal mixture. *Biometrika*, 88, 767-778.
- Mahady Wilton, M., Craig, W., & Pepler, D. (2000). Emotion regulation and display in classroom victims of bullying: Characteristic expressions of affect, coping styles, and relevant contextual factors. *Social Development*, 9(2), 226-225. doi: 10.1111/1467-9507.00121
- Mariano, K., & Harton, H. (2005). Similarities in aggression, inattention/hyperactivity, depression, and anxiety in middle childhood

- friendships. *Journal of Social and Clinical Psychology*, 24(4), 471-496. doi: 10.1521/jscp.2005.24.4.471
- McArdle, J. (2005). The development of RAM rules for latent variable structural equation modeling. In A. Maydeu-Olivares & J. McArdle (Eds.), *Contemporary psychometrics: A festschrift for Roderick P. McDonald* (pp. 225-273). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Mohr, A. (2006). Family variables associated with peer victimization: Does family violence enhance the probability of being victimized by peers? *Swiss Journal of Psychology*, 65(2), 107-116. doi: 10.1024/1421-0185.65.2.107
- Mouttapa, M., Valente, T., Gallaher, P., Rohrbach, L., & Unger, J. (2004). Social network predictors of bullying and victimization. *Adolescence*, 39(154), 315-335.
- Murray-Close, D., & Crick, N. (2006). Mutual antipathy involvement: Gender and associations with aggression and victimization. *School Psychology Review*, 35(3), 472-492.
- Muthén, L., & Muthén, B. (1998-2010). *Mplus user's guide* (6th ed.). Los Angeles, CA: Muthén & Muthén.
- Nansel, T., Overpeck, M., Pilla, R., Ruan, W., Simons-Morton, B., & Sheidt, P. (2001). Bullying behaviors among us youth: Prevalence and association with psychosocial adjustment. *Journal of the American Medical Association*, 285(16), 2094-2100. doi: 10.1001/jama.285.16.2094

- Nishina, A., Ammon, N., Bellmore, A., & Graham, S. (2006). Body dissatisfaction and physical development among ethnic minority adolescents. *Journal of Youth and Adolescence*, 35(2), 189-201. doi: 10.1007/s10964-005-9012-7
- Olweus, D. (1978). *Aggression in the schools: Bullies and whipping boys*. Oxford, England: Hemisphere.
- Olweus, D. (1992). Victimization by peers: Antecedents and long-term outcomes. In K. Rubin & J. Asendorpf (Eds.), *Social withdrawal, inhibition, and shyness in childhood* (pp. 315-341). Hillsdale, NJ: Erlbaum.
- Olweus, D. (2001). Peer harassment: A critical analysis and some important issues. In J. Juvonen & S. Graham (Eds.), *Peer harassment in schools: The plight of the vulnerable and victimized* (pp. 3-20). New York: The Guilford Press.
- Olweus, D., & Baenninger, R. (1991). Victimization among school children. In *Targets of violence and aggression*. (pp. 45-102). Oxford, England: North-Holland.
- Ostrov, J. (2010). Prospective associations between peer victimization and aggression. *Child Development*, 81(6), 1670-1677. doi: 10.1111/j.1467-8624.2010.01501.x
- Parker, J., & Asher, S. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology*, 29(4), 611-621. doi: 10.1037/0012-1649.29.4.611
- Pellegrini, A., Bartini, M., & Brooks, F. (1999). School bullies, victims, and aggressive victims: Factors relating to group affiliation and victimization in early

- adolescence. *Journal of Educational Psychology*, 91(2), 216-224. doi: 10.1037/0022-0663.91.2.216
- Pellegrini, A., & Long, J. (2002). A longitudinal study of bullying, dominance, and victimization during the transition from primary school through secondary school. *British Journal of Developmental Psychology*, 20(2), 259-280. doi: 10.1348/026151002166442
- Perren, S., & Alsaker, F. (2006). Social behavior and peer relationships of victims, bully-victims, and bullies in kindergarten. *Journal of Child Psychology and Psychiatry*, 47(1), 45-57. doi: 10.1111/j.1469-7610.2005.01445.x
- Perry, D., Hodges, E., & Egan, S. (2001). Determinants of chronic victimization by peers: A review and new model of family influence. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and the victimized*. New York: The Guilford Press.
- Perry, D., Kusel, S., & Perry, L. (1988). Victims of peer aggression. *Developmental Psychology*, 24, 807-814. doi: 10.1037/0012-1649.24.6.807
- Putallaz, M., Grimes, C., Foster, K., Kupersmidt, J., Coie, J., & Dearing, K. (2007). Overt and relational aggression and victimization: Multiple perspectives within the school setting. *Journal of School Psychology*, 45, 523-547. doi: 10.1016/j.jsp.2007.05.003
- Reavis, R., Keane, S., & Calkins, S. (2010). Trajectories of peer victimization: The role of multiple relationships. *Merrill-Palmer Quarterly*, 56(3), 303-332.

- Rigby, K., Slee, P., & Martin, G. (2007). Implications of inadequate parental bonding and peer victimization for adolescent mental health. *Journal of Adolescence*, 30(5), 801-812. doi: 10.1016/j.adolescence.2006.09.008
- Rose, A., & Asher, S. (1999). Children's goals and strategies in response to conflicts within a friendship. *Developmental Psychology*, 35(1), 69-79. doi: 10.1037/0012-1649.35.1.69
- Rose, A., & Asher, S. (2004). Children's strategies and goals in response to help-giving and help-seeking tasks within a friendship. *Child Development*, 75(3), 749-763. doi: 10.1111/j.1467-8624.2004.00704.x
- Rosen, P., Milich, R., & Harris, M. (2007). Victims of their own cognitions: Implicit social cognitions, emotional distress, and peer victimization. *Journal of Applied Developmental Psychology*, 28(3), 211-226. doi: 10.1016/j.appdev.2007.02.001
- Rubin, K., Coplan, R., Fox, N., & Calkins, S. (1995). Emotionality, emotion regulation, and preschoolers' social adaptation. *Development and Psychopathology*, 7(1), 49-62. doi: 10.1017/S0954579400006337
- Rudolph, K., Ladd, G., & Dinella, L. (2007). Gender differences in the interpersonal consequences of early-onset depressive symptoms. *Merrill-Palmer Quarterly*, 53(3), 461-488. doi: 10.1353/mpq.2007.0020
- Sainio, M., Veenstra, R., Huitsin, G., & Salmivalli, C. (2011). Victims and their defenders: A dyadic approach. *International Journal of Behavioral Development*, 35(2), 144-151. doi: 10.1177/0165025410378068

- Salmivalli, C. (1999). Participant role approach to school bullying: Implications for intervention. *Journal of Adolescence*, 22(4), 453-459. doi: 10.1006/jado.1999.0239
- Salmivalli, C. (2001). Group view on victimization: Empirical findings and their implications. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and victimized* (pp. 398-419). New York, NY: Guilford Press.
- Salmivalli, C. (2010). Bullying and the peer group: A review. *Aggression and Violent Behavior*, 15(2), 112-120. doi: 10.1016/j.avb.2009.08.007
- Salmivalli, C., & Helteenvouri, T. (2007). Reactive, but not proactive aggression predicts victimization among boys. *Aggressive Behavior*, 33, 198-206. doi: 10.1002/ab.20210
- Salmivalli, C., Karhunen, J., & Lagerspetz, K. (1996). How do the victims respond to bullying? *Aggressive Behavior*, 22(2), 99-109. doi: 10.1002/(SICI)1098-2337(1996)22:2<99:AID-AB3>3.0.CO;2-P
- Salmivalli, C., Kärnä, A., & Poskiparta, E. (2010). From peer putdowns to peer support: A theoretical model and how it translated into a national anti-bullying program. In S. Jimerson, S. Swearer, & D. Espelage (Eds.), *Handbook of bullying in schools: An international perspective* (pp. 441-454). New York, NY: Routledge/Taylor & Francis Group.
- Salmivalli C., Lagerspetz, K., Björkqvist, K., Österman, K., & Kaukiainen, A. (1996). Bullying as a group process: Participant roles and their relations to social

- status within the group. *Aggressive Behavior*, 22(1), 1-15. doi: 10.1002/(SICI)1098-2337(1996)22:1<1::AID-AB1>3.0.CO;2-T
- Salmivalli, C., & Voeten, M. (2004). Connections between attitudes, group norms, and behaviour in bullying situations. *International Journal of Behavioral Development*, 28(3), 246-258. doi: 10.1080/01650250344000488
- Schafer, J., & Graham, J. (2002). Missing data: Our view of the state of the art. *Psychological Methods*, 7(2), 147-177. doi: 10.1037/1082-989X.7.2.147
- Schwartz, D., Dodge, K., Pettit, G., & Bates, J. (1997). The early socialization of aggressive victims of bullying. *Child Development*, 68(4), 665-675. doi: 10.2307/1132117
- Schwartz, D., Dodge, K., Pettit, G., & Bates, J. (2000). Friendship as a moderating factor in the pathway between early harsh home environment and later victimization in the peer group. *Developmental Psychology*, 36(5), 646-662. doi: 10.1037/0012-1649.36.5.646
- Schwartz, D., Proctor, L., & Chien, D. (2001). The aggressive victim of bullying: Emotional and behavioral dysregulation as a pathway to victimization by peers. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and victimized* (pp. 147-174). New York: The Guilford Press.
- Smith, P., Shu, S., & Madsen, K. (2001). Characteristics of victims of school bullying: Developmental changes in coping strategies and skills. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of the vulnerable and victimized*. (pp. 332-351). New York, NY, US: Guilford Press.

- Smith, P., Talamelli, L., Cowie, H., Naylor, P., & Chauhan, P. (2004). Profiles of non-victims, escaped victims, continuing victims, and new victims of school bullying. *British Journal of Educational Psychology*, 74(4), 565-581. doi: 10.1348/0007099042376427
- Solberg, M., & Olweus, D. (2003). Prevalence estimation of school bullying with the Olweus Bully/Victim Questionnaire. *Aggressive Behavior*, 29(3), 239-268. doi: 10.1002/ab.10047
- Storch, E., & Ledley, D. (2005). Peer victimization and psychosocial adjustment in children: Current knowledge and future directions. *Clinical Pediatrics*, 44(1), 29-38. doi: 10.1177/000992280504400103
- Terry, R. (2000). Recent advances in measurement theory and the use of sociometric techniques. In A. Cillessen & W. Bukowski (Eds.), *Recent advances in the measurement of acceptance and rejection in the peer system* (pp. 27-53).
- Underwood, M. (2007). Gender and children's friendships: Do girls' and boys' friendships constitute different peer cultures, and what are the trade-offs for development? *Merrill-Palmer Quarterly*, 53(3), 319-324. doi: 10.1353/mpq.2007.0022
- Veenstra, R., Lindenberg, S., Munniksma, A., & Dijkstra, J. (2010). The complex relation between bullying, victimization, acceptance, and rejection: Giving special attention to status, affection, and sex differences. *Child Development*, 81(2), 480-486. doi: 10.1111/j.1467-8624.2009.01411.x

Veenstra, R., Lindenberg, S., Zijlstra, B., DeWinter, A., Verhulst, F., & Ormel, J. (2007).

The dyadic nature of bullying and victimization: Testing a dual-perspective theory. *Child Development*, 78(6), 1843-1854. doi: 10.1111/j.1467-8624.2007.01102.x

Visconti, K., & Troop-Gordon, W. (2010). Prospective relations between children's responses to peer victimization and their socioemotional adjustment. *Journal of Applied Developmental Psychology*, 31(4), 261-272. doi: 0.1016/j.appdev.2010.05.003

APPENDIX A. TABLES

Table 1

Descriptive Statistics for Study Variables

	Mean	SD	Range
Acceptance	0.002	0.97	-2.79 - 2.17
Aggression			
Kindergarten	0.17	0.19	0 - 1
First Grade	0.14	0.17	0 - .83
Second Grade	0.13	0.16	0 - .82
Fifth Grade	0.08	0.12	0 - .80
Peer Victimization			
Kindergarten	0.14	0.11	0 - .75
First Grade	0.11	0.1	0 - .80
Second Grade	0.09	0.1	0 - .71
Fifth Grade	0.07	0.11	0 - .76
Friend Aggression	-0.1	0.83	-2.24 - 2.99
Friend Withdrawal	0.004	0.86	-2.25 - 3.55
	% Friendled	% Friendless	
Friend Status	67%	33%	

Table 2

Correlations Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Friend Status	--											
2. Acceptance	.36***	--										
3. Aggression - K	-.15***	-.49***	--									
4. Aggression - 1st	-.13**	-.31***	.51***	--								
5. Aggression - 2nd	-.14**	-.28***	.51***	.56***	--							
6. Aggression - 5th	-.07	-.26***	.39***	.38***	.37***	--						
7. Victimization - K	-.01	-.06*	.25***	.11**	.13**	.09*	--					
8. Victimization - 1st	-.08	-.04	.09*	.17***	.14*	.10	.09*	--				
9. Victimization - 2nd	-.10*	-.13**	.14**	.10	.19***	.03	.19***	.34***	--			
10. Victimization - 5th	-.19***	-.30***	.17***	.17**	.10	.28***	.04	.21***	.24***	--		
11. Friend Aggression	--	-.13***	.16***	.12*	.10	.13**	-.01	-.02	-.06	.05	--	
12. Friend Withdrawal	--	.04	-.07**	-.11*	-.05	-.07	.01	-.01	.02	-.03	-.16***	--

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3

Fit Statistics for One Through Four Class Models

	One Class	Two Class	Three Class	Four Class
Likelihood	5491.464	6191.794	6403.861	6568.424
# of Parameters	17	22	27	32
AIC	-10948.927	-12339.588	-12753.722	-13072.847
BIC	-10849.096	-12210.394	-12595.165	-12884.928
VLMR-LRT p-value	--	< .001	0.08	0.08
Entropy	--	0.88	0.85	0.84
Sample Sizes	2624	392/2232	379/38/2207	424/2047/ 38/115

Table 4

Cross Tabulation of Gender and Class Membership

	Moderate	Normative	Increasing Victimization	Decreasing Victimization, Stable Aggression
Boys	302	814	22	91
Girls	93	1100	14	16

Table 5

Intercepts and Slopes of Aggression and Victimization for the Four-Class Solution

	Moderate	Normative	Increasing Victimization	Decreasing Victimization, High Aggression
Intercept - Aggression	.40***	.09***	.22***	.63***
Slope - Aggression	-.057***	-.008***	.01	-.017*
Intercept - Victimization	0.18***	.12***	.15***	.21***
Slope - Victimization	-.024***	-.015***	.070***	-.026***

Note. * $p < .05$. *** $p < .001$.

Table 6

Odds Ratios for Gender as a Predictor: Normative Class as Comparison

Measure	β	SE	z	Odds Ratio
Moderate, Decreasing				
Gender	1.68	0.21	8.07***	5.38 (.19)
Inc Vic, Stable				
Agg				
Gender	1.21	0.56	2.17*	3.35 (.30)
Decreasing Vic, High Agg				
Gender	3.33	0.68	4.90***	27.93 (.04)

Note. Odds ratios in parentheses are the reciprocals and refer to the odds of membership in the Normative Class. *Inc* = Increasing, *Vic* = victimization, *Agg* = aggression.

* $p < .05$. *** $p < .001$.

Table 7

Odds Ratios for Gender as a Predictor: Increasing Victimization, Stable Aggression Class as Comparison

Measure	β	SE	z	Odds Ratio
Moderate, Decreasing Gender	0.48	0.63	0.75	1.62
Decreasing Vic, High Agg Gender	2.12	0.86	2.46*	8.33 (.12)

Note. Odds ratios in parentheses are the reciprocals and refer to the odds of membership in the Increasing Victimization, Stable Aggression Class. *Vic* = victimization, *Agg* = aggression.

* $p < .05$.

Table 8

Odds Ratios for Gender as a Predictor: Decreasing Victimization, High Aggression Class as Comparison

Measure	β	SE	z	Odds Ratio
Moderate, Decreasing Gender	-1.65	0.75	-2.21*	0.19 (5.26)

Note. Odds ratios in parentheses are the reciprocals and refer to the odds of membership in the Decreasing Victimization, High Aggression Class. *Vic* = victimization, *Agg* = aggression.

* $p < .05$.

Table 9

*Odds Ratios for Significant Main Effects of Gender and Peer Status Variables:
Normative Class as Comparison*

Measure	β	SE	z	Odds Ratio
Moderate, Decreasing				
Gender	1.67	0.16	10.20***	5.31 (.19)
Friend Status	0.21	0.17	1.21	1.23
Acceptance	-1.21	0.12	-10.00***	0.30 (3.33)
Inc Vic, Stable Agg				
Gender	1.44	0.39	3.68***	4.22 (.24)
Friend Status	-0.51	0.38	-1.35	0.60
Acceptance	-1.49	0.22	-6.84***	0.23 (4.35)
Decreasing Vic, High Agg				
Gender	2.37	0.31	7.72***	10.70 (.093)
Friend Status	0.47	0.24	1.96*	1.60 (.63)
Acceptance	-2.36	0.24	-9.95***	0.09 (11.11)

Note. Odds ratios in parentheses are the reciprocals and refer to the odds of membership in the Normative Class. *Inc* = Increasing, *Vic* = victimization, *Agg* = aggression.

* $p < .05$. *** $p < .001$.

Table 10

*Odds Ratios for Significant Main Effects of Gender and Peer Status Variables:
Increasing Victimization, Stable Aggression Class as Comparison*

Measure	β	SE	z	Odds Ratio
Moderate, Decreasing				
Gender	0.23	0.43	0.54	1.26
Friend Status	0.72	0.41	1.74+	2.05 (.49)
Acceptance	0.28	0.22	1.29	1.32
Decreasing Vic, High Agg				
Gender	0.93	0.45	2.07*	2.53 (.40)
Friend Status	0.98	0.41	2.41*	2.66 (.38)
Acceptance	-0.87	0.26	-3.39**	0.42 (2.38)

Note. Odds ratios in parentheses are the reciprocals and refer to the odds of membership in the Increasing Victimization, Stable Aggression Class. *Vic* = victimization, *Agg* = aggression.

+ $p < .10$ * $p < .05$. *** $p < .001$.

Table 11

*Odds Ratios for Significant Main Effects of Gender and Peer Status Variables:
Decreasing Victimization, High Aggression Class as Comparison*

Measure	β	SE	z	Odds Ratio
Moderate, Decreasing				
Gender	-0.7	0.32	-2.17*	0.50 (2.00)
Friend Status	-0.26	0.25	-1.02	0.77 (1.30)
Acceptance	1.15	0.2	5.85***	3.16 (.32)

Note. Odds ratios in parentheses are the reciprocals and refer to the odds of membership in the Decreasing Victimization, High Aggression Class.

* $p < .05$. *** $p < .001$.

Table 12

Odds Ratios for Significant Effects of Gender, Friend Characteristic Variables, and Interactions: Normative Class as Comparison

Measure	β	SE	z	Odds Ratio
Moderate, Decreasing				
Friend Agg	0.35	0.28	1.23	1.42
Friend W/d	-0.06	0.25	-0.24	0.94
Gender	1.59	0.26	6.20***	4.90 (.20)
AggXGender	-0.21	0.31	-0.66	0.81
W/dXGender	0.2	0.28	0.7	1.22
Inc Vic, Stable Agg				
Friend Agg	0.96	0.33	2.89**	2.61 (.38)
Friend W/d	-0.13	0.45	-0.28	0.88
Gender	1.3	0.62	2.09*	3.67 (.27)
AggXGender	-1.06	0.53	-1.98*	0.35 (2.86)
W/dXGender	0.69	0.95	0.73	1.99

Note. Odds ratios in parentheses are the reciprocals and refer to the odds of membership in the Normative Class. *Inc* = Increasing, *Vic* = victimization, *Agg* = aggression, *W/d* = withdrawal.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 13

Odds Ratios for Significant Effects of Gender, Friend Characteristic Variables, and Interactions: Increasing Victimization, Stable Aggression Class as Comparison

Measure	β	SE	z	Odds Ratio
Moderate, Decreasing				
Friend Agg	-0.61	0.41	-1.50	0.54
Friend W/d	0.07	0.53	0.13	1.07
Gender	0.29	0.67	0.44	1.34
AggXGender	0.85	0.58	1.47	2.34
W/dXGender	-0.49	0.96	-0.51	0.61

Note. Odds ratios in parentheses are the reciprocals and refer to the odds of membership in the Increasing Victimization Class. *Vic* = victimization, *Agg* = aggression, *W/d* = withdrawal.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 14

Odds Ratios for Significant Effects of Gender, Friend Characteristic Variables, and Interactions: Decreasing Victimization, High Aggression Class as Comparison.

Measure	β	SE	z	Odds Ratio
Moderate, Decreasing				
Friend Agg	-0.07	0.58	-0.12	0.93
Friend W/d	3.49	0.96	3.62***	32.79 (.03)
Gender	-3.69	1.26	-2.93**	0.02 (50)
AggXGender	0.31	0.62	0.5	1.36
W/dXGender	-3.27	0.99	-3.31**	0.04 (25)
Normative				
Friend Agg	-0.42	0.51	-0.81	0.66
Friend W/d	3.55	0.94	3.79***	34.81 (.03)
Gender	-5.28	1.23	-4.30***	0.01 (100)
AggXGender	0.52	0.54	0.96	1.68
W/dXGender	-3.27	0.95	-3.63***	0.04 (25)
Inc Vic, Stable Agg				
Friend Agg	0.54	0.59	0.92	1.72
Friend W/d	3.42	1.03	3.31**	30.57 (.03)
Gender	-3.98	1.39	-2.87**	0.02 (25)
AggXGender	-0.54	0.73	-0.74	0.58
W/dXGender	-2.78	1.32	-2.11*	0.06 (16.67)

Note. Odds ratios in parentheses are the reciprocals and refer to the odds of membership in the Decreasing Victimization, High Aggression Class. *Inc* = Increasing, *Vic* = victimization, *Agg* = aggression, *W/d* = withdrawal.

* $p < .05$. ** $p < .01$. *** $p < .001$.

APPENDIX B. FIGURES

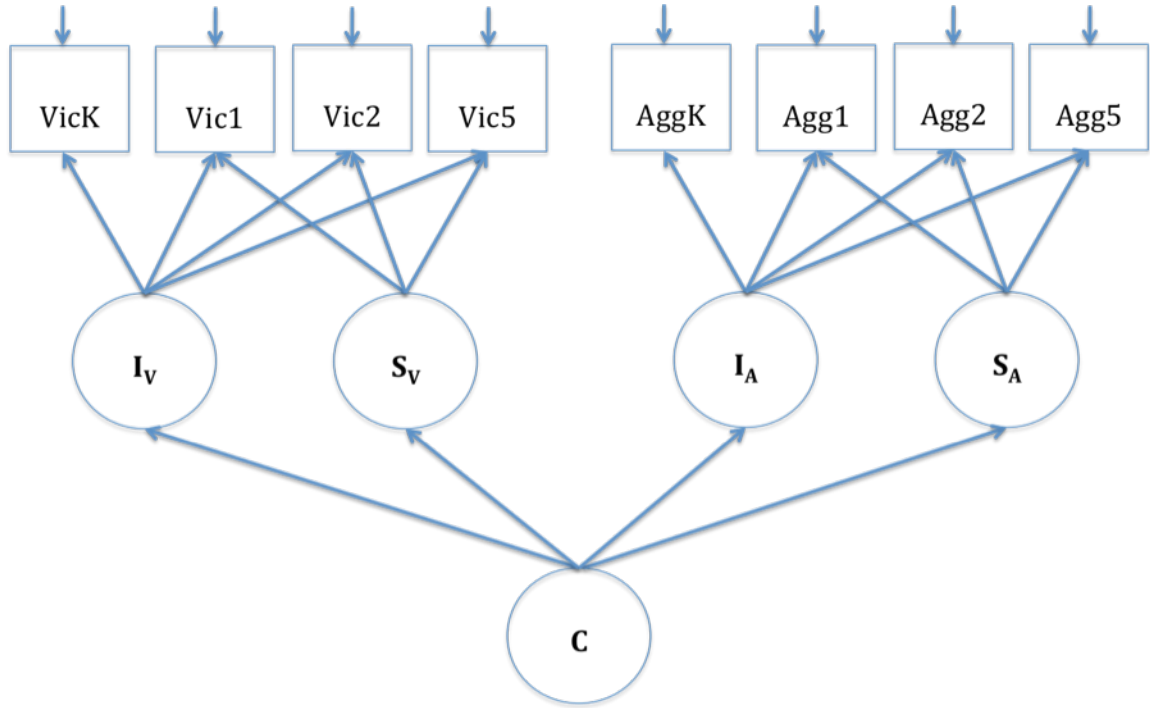
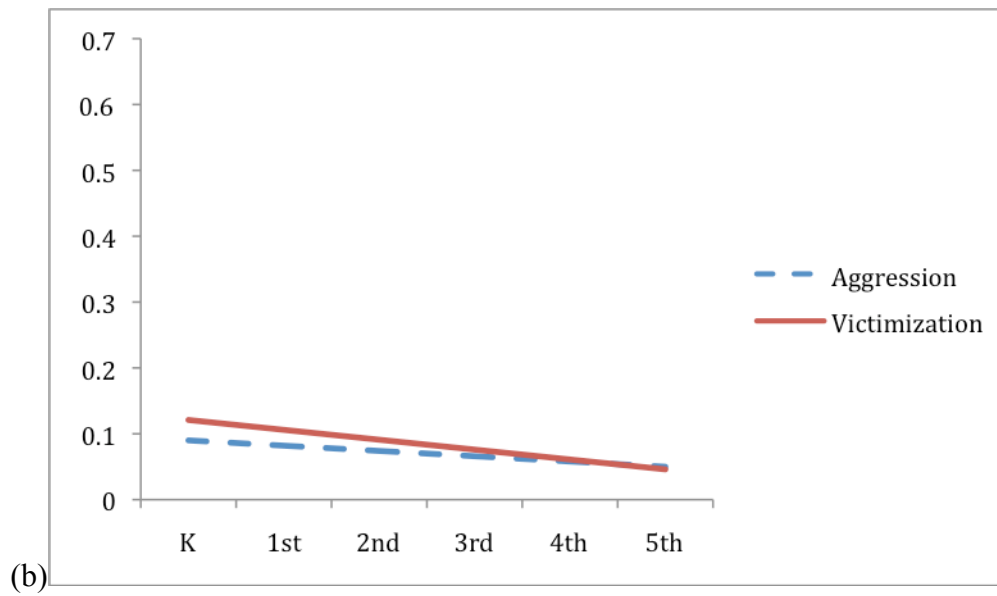
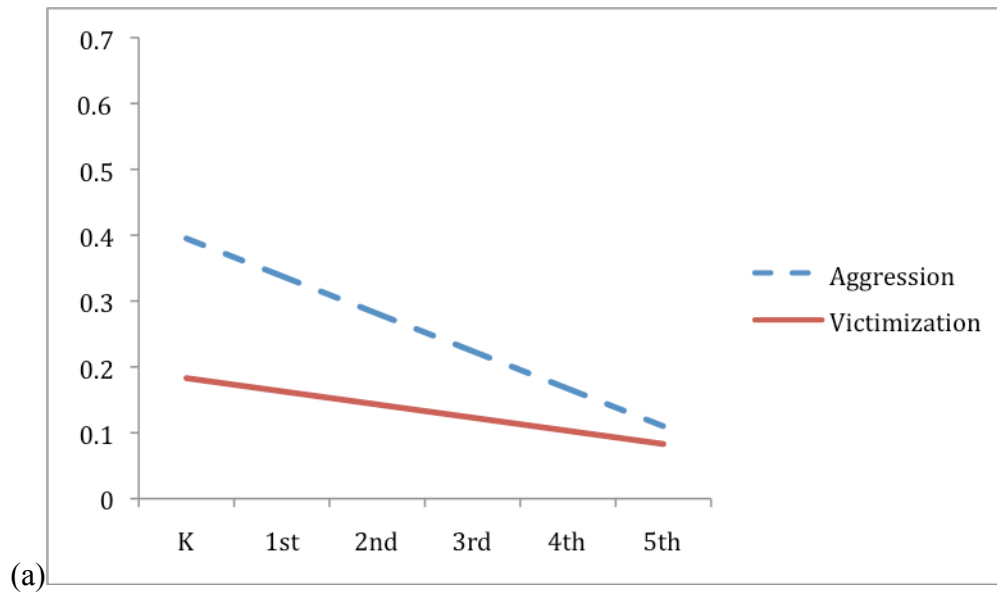


Figure 1. Basic Latent Class Growth Model Estimated.

Note. Vic, V = victimization; Agg, A = aggression; K = kindergarten; 1,2, & 5 indicate grade level; I = intercept; S = slope; C = class.



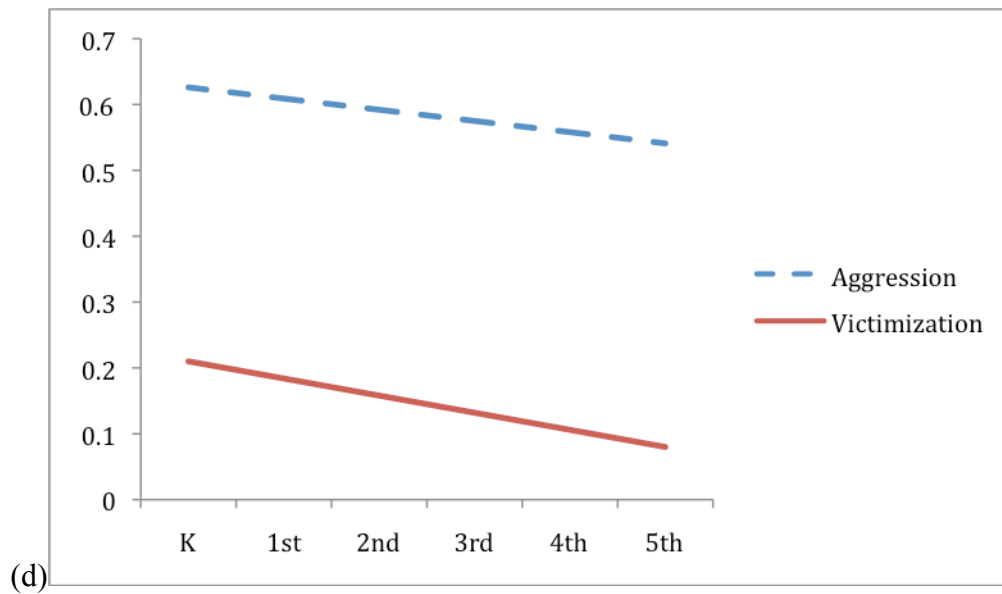
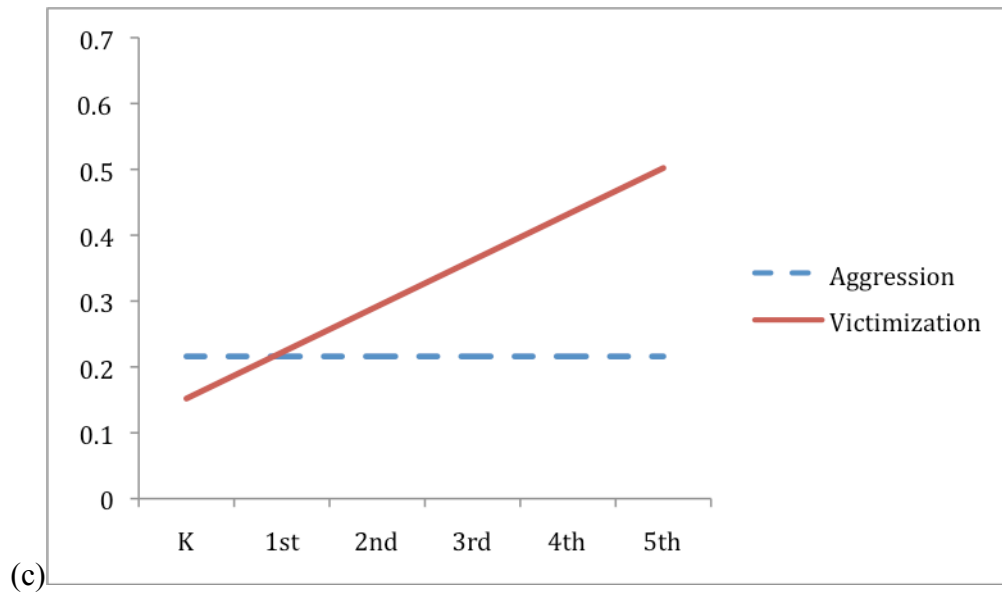


Figure 2. Aggression and Victimization Trajectories for the (a) Moderate Class, (b) Normative Class, (c) Increasing Victimization, Stable Aggression Class, and (d) Decreasing Victimization, High Aggression Class.

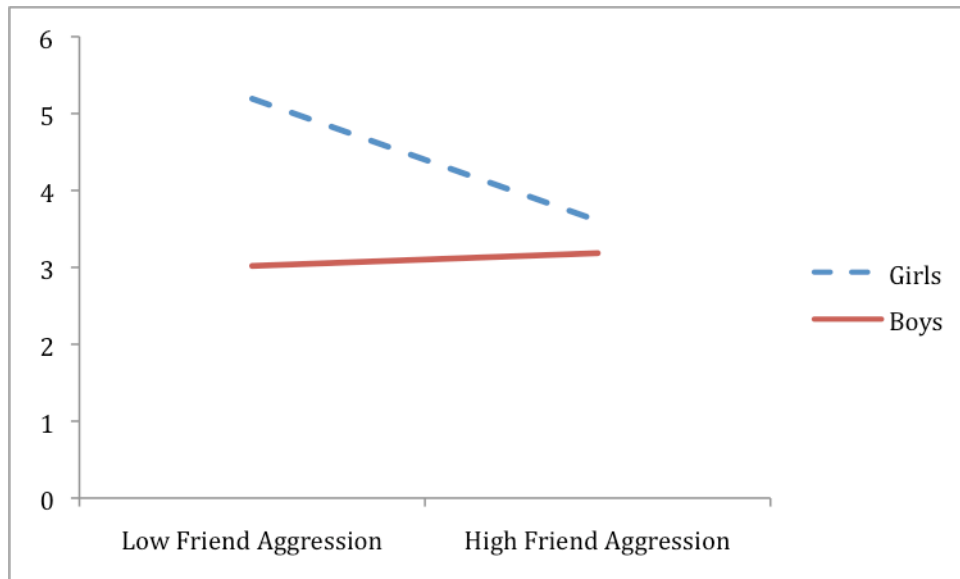
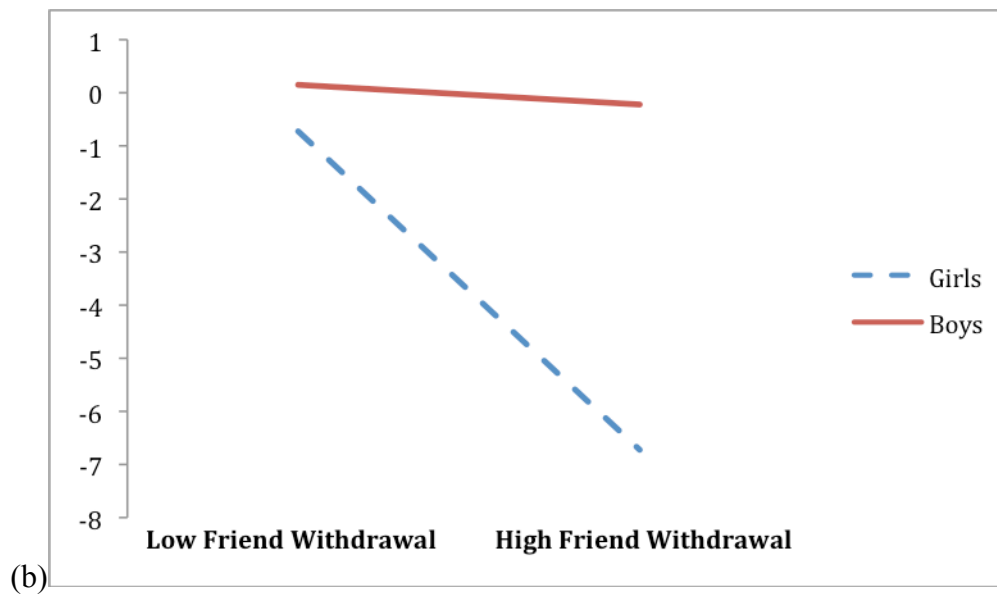
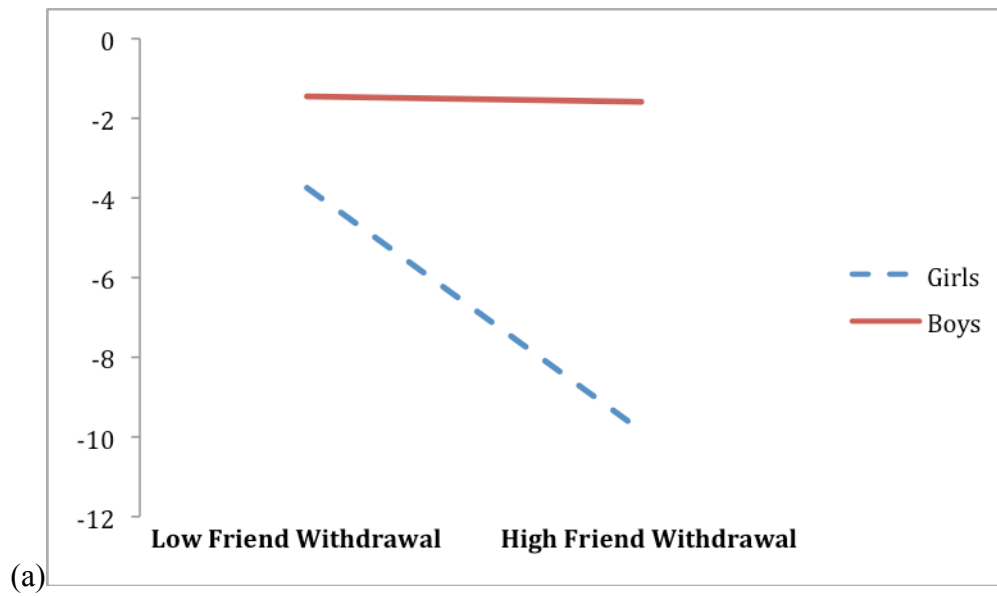


Figure 3. Interactions with Friend Aggression and Gender Predicting the Log Odds of Membership in the Normative Class Versus the Increasing Victimization Class.



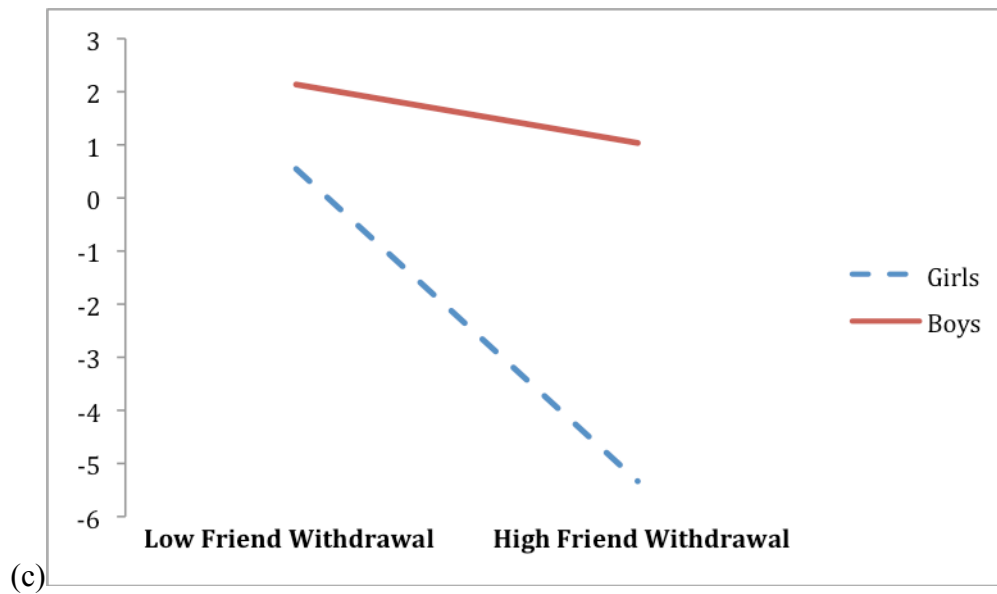


Figure 4. Interactions with Friend Withdrawal and Gender Predicting Log Odds of Membership in the Decreasing Victimization, High Aggression Class Versus (a) the Normative Class, (b) the Moderate Class, and (c) Increasing Victimization Class.